

4.6 Data Ingest

ECS Data Ingest provides the software capability to acquire data by various methods and transfer the data into the ECS system. These methods include an automated transfer from prior request information, polling with or without delivery records for data, which is placed at predetermined locations, and a media transfer method, which includes reading tapes. The ECS Data Ingest subsystem also stores and manages request information, and provides for data preprocessing storage and insertion into the appropriate ECS storage location.

The ECS Data Ingest subsystem provides a GUI which allows the operator to view past ingest activities, monitor and control ingest requests, modify system and external data provider parameters, and initiate hard media ingest. It also provides the Regenerate Failed Product Delivery Record (PDR) tool, which allows the operator to generate Product Delivery Records for each granule that failed in a PDR.

This page intentionally left blank

4.6.1 Data Ingest GUI

The Data Ingest tool allows the operators to view past ingest activities, monitor and control ingest requests, modify system and external data provider parameters, and initiate hard media ingest. Table 4.6.1-1 provides details on this tool's functions.

Table 4.6.1-1. Operator Ingest Functions

Operating Function	GUI	Description	When and Why to Use
Ingest History Log Viewing ¹	History Log Tab	<ul style="list-style-type: none">• Displays a log that contains the results of past ECS ingest requests• Specifies search criteria (e.g., time range), the provider ID, data set name, and request status of the Ingest History Log for log display	As needed or for regularly scheduled Ingest performance reports or to view previously occurred Ingest activities.
Ingest Status Monitoring	Monitor/ Control Tab	<ul style="list-style-type: none">• Monitors the status of all or a subset of the ingest requests that are in progress	As required to verify nominal system operations.
Operator Request Update	Monitor/ Control Tab	<ul style="list-style-type: none">• Updates (i.e., cancel and resume) an on going ingest request on either request or granule level	As needed to cancel a problem request on request/granule level; or resume a suspended request on request/granule level.
Hard Media Ingest	Media Ingest Tab	<ul style="list-style-type: none">• Operator performs hard media ingest (e.g., 8mm tape)• Media Ingest Session is configured on the Operator's GUI to accept the request and submit it to the ECS system	As needed to Ingest hard media.
Modify System Parameters	Operator Tools Tab	Operator updates system parameter values including: volume threshold, request threshold, communication retry count, completed request monitor time, request monitor screen refresh time.	As needed to tune the system to current or expected daily activity thresholds.
Modify External Data Provider Information	Operator Tools Tab	<ul style="list-style-type: none">• Operator updates parameter values for each external data provider• Value includes volume threshold, request threshold and priority level	As needed to tune the system to current or expected daily activity thresholds on an external data provider basis.

¹Individual DAAC policy determines the duration for which Ingest History Log information is stored and available for viewing.

4.6.1.1 Quick Start Using Data Ingest

To execute the ECS Data Ingest GUI from the command line prompt, type:

>EcInGUIStart <mode> [ea_instance <instance_name>] where:

<mode> is the ECS mode for the execution (e.g., OPS, TS1 or TS2) and

<instance_name> is an optional parameter used to start a different instance of the GUI. This is used if the GUI needs to be started multiple times in a mode. There needs to be a configuration file for each instance started.

4.6.1.2 ECS Data Ingest Main Screen

The Ingest Main screen, with the "Welcome To ECS INGEST GUI Interface" screen, is shown in Figure 4.6.1-1. The major functions available by clicking on tabs on this screen are:

“**Ingest Intro**” is the default tab that welcomes the user to the tool.

"**History Log**" provides operations personnel the capability to view ingest activities that are no longer active (see Section 4.6.1.2.1).

"**Monitor/Control**" provides operations personnel the capability to monitor and update ongoing ingest activities in the system (see Section 4.6.1.2.2).

"**Operator Tools**" provides operations personnel the capability to modify interactive user information by external data provider and/or modify system parameters (see Section 4.6.1.2.3).

"**Media Ingest**" provides operations personnel the capability to perform hard media ingest. The delivery record is required for media ingest (see Section 4.6.1.2.4).

There is a Menu Bar at the top of the window for getting help and activating less-frequently used secondary functions. The Menu Bar capability is available on all Ingest GUI screens. The following menus are available:

- "**File**" provides exit capability through the **exit** or **close** command and **print** and **save** capabilities, where applicable.
- "**Help**" displays general and context-sensitive help. Select "**On Help**" from the menu to get detailed help on using help. Select "**On Keys**" to get help on keyboard and mouse usage, and for general help on interacting with user interface components.



Figure 4.6.1-1. Ingest Main Screen Shown in the Ingest Intro Tab

4.6.1.2.1 History Log Tab

The History Log tab shown in Figure 4.6.1-2 provides operations personnel with the capability to view ingest requests, which are no longer monitored by the Ingest system.

Operations personnel can selectively view the Ingest History Log based on the following search criteria:

- **Start and Stop Date/Time**
- **Data Provider**
- **Data Type**
- **Final Request Status**

Operations personnel can request a **Detailed Report** or just a **Summary Report** for the specified search criteria. The **Display** button populates the log window with the detailed or summary information selected. The “**History Log**” information is displayed in the history log information window.

Operations personnel can print requested History Log information by choosing the “**Print**” option from the **File** Menu.

Operations personnel can save requested History Log information by choosing the “**Save**” option from the **File** Menu. The file is saved in the operator’s default directory. This option is useful for saving Ingest History and Performance reports to a file for transmission to the SMC. History and Performance report generation is discussed in Section 4.6.1.8.

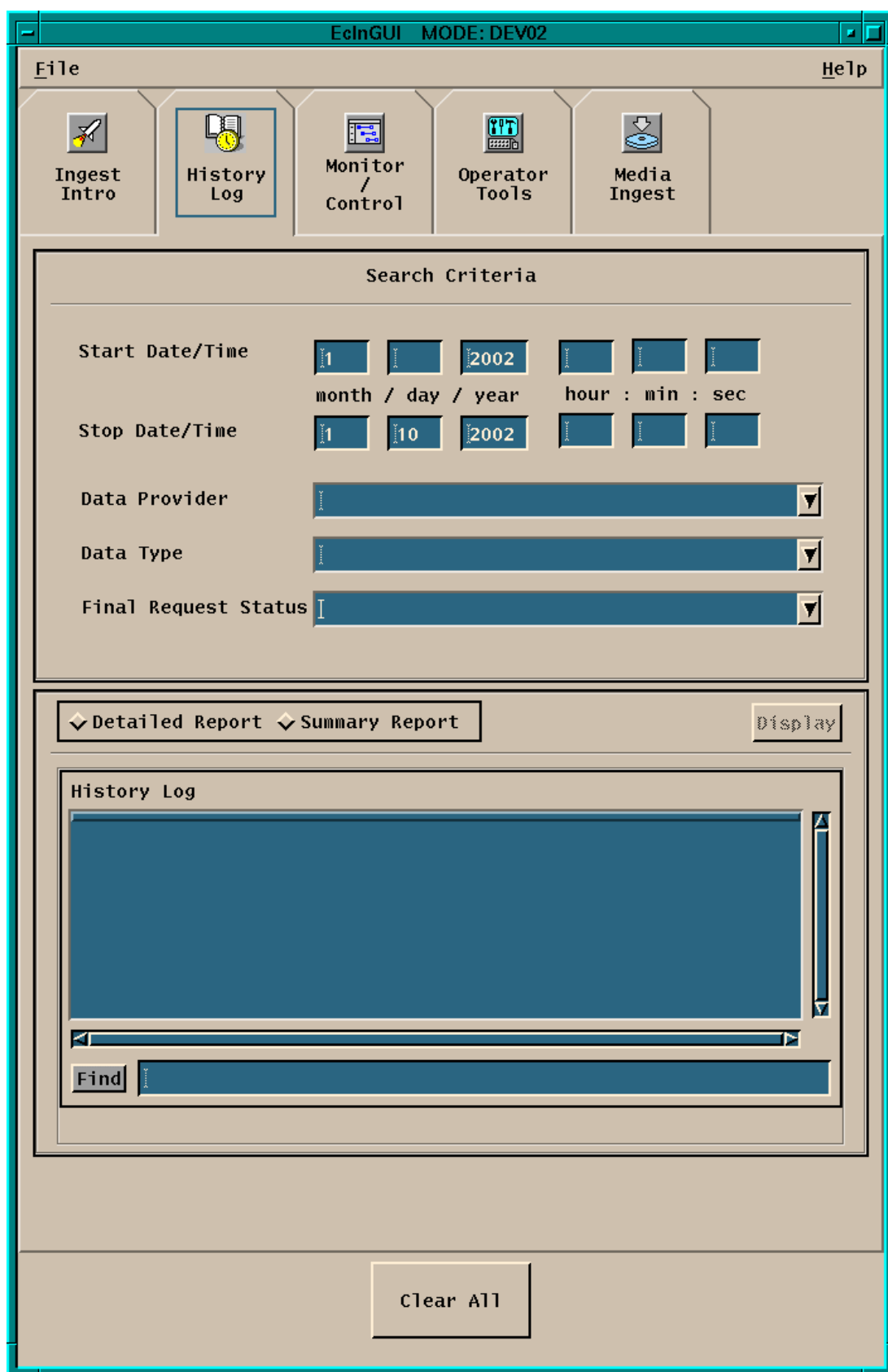


Figure 4.6.1-2. History Log Tab

Fields on the “History Log” tab are defined in Table 4.6.1-2 below.

Table 4.6.1-2. History Log Field Descriptions

Field Name	Data Type	Size	Entry	Description
Start Date/Time	Date/Time	mm/dd/yyyy hh:mm:ss	Operator Selected (Default = Current Date/Time - 24 hrs.)	Entry fields for the Start Date and Time.
Stop Date/Time	Date/Time	mm/dd/yyyy hh:mm:ss	Operator Selected (Default = Current Date/Time)	Entry fields for the Stop Date and Time.

Additional functionality is made available to the operator on the History Log tab through the following graphical components:

- The pull down menu “**File**”, that provides the capability to exit the GUI;
- The pull down menu “**Help**”, that displays general and context sensitive information;
- The radio buttons “**Summary Report**” and “**Detailed Report**”, allow toggling between the two possible optional types of report.
- The button “**Clear All**” that clears the current screen.

The selection of possible filters for the history log is automated through the availability of three lists: “**Data Provider**”, “**Data Type**”, and “**Final Request Status**” from which the operator can chose a number of possible options.

4.6.1.2.2 Monitor/Control Tab

Clicking on the Monitor/Control tab brings up the **Monitor/Control** tab as shown in Figure 4.6.1-3. This tab provides operations personnel with the capability to monitor ongoing ingest activities in the system. The Control feature allows the operator to cancel a request on either request or granule level. It also allows a suspended request to be resumed at either request or granule level.

The Ingest Monitor/Control tab is divided into four regions:

- Search By allows operations personnel to view all or selected ingest requests in the system.
- View Selection and Action Type button. The tab defaults to show the text view for the request information. If the graphical view button is selected, the text view region is shown as indicated in Figure 4.6.1-4.
- Information display -- allows the operator to display information in two ways based upon the selection of **Graphical View** or **Text View**
- Control Types – designed to provide operations personnel with the capability to update ongoing ingest activities in the system. Update services include **Resume** and **Cancel**.

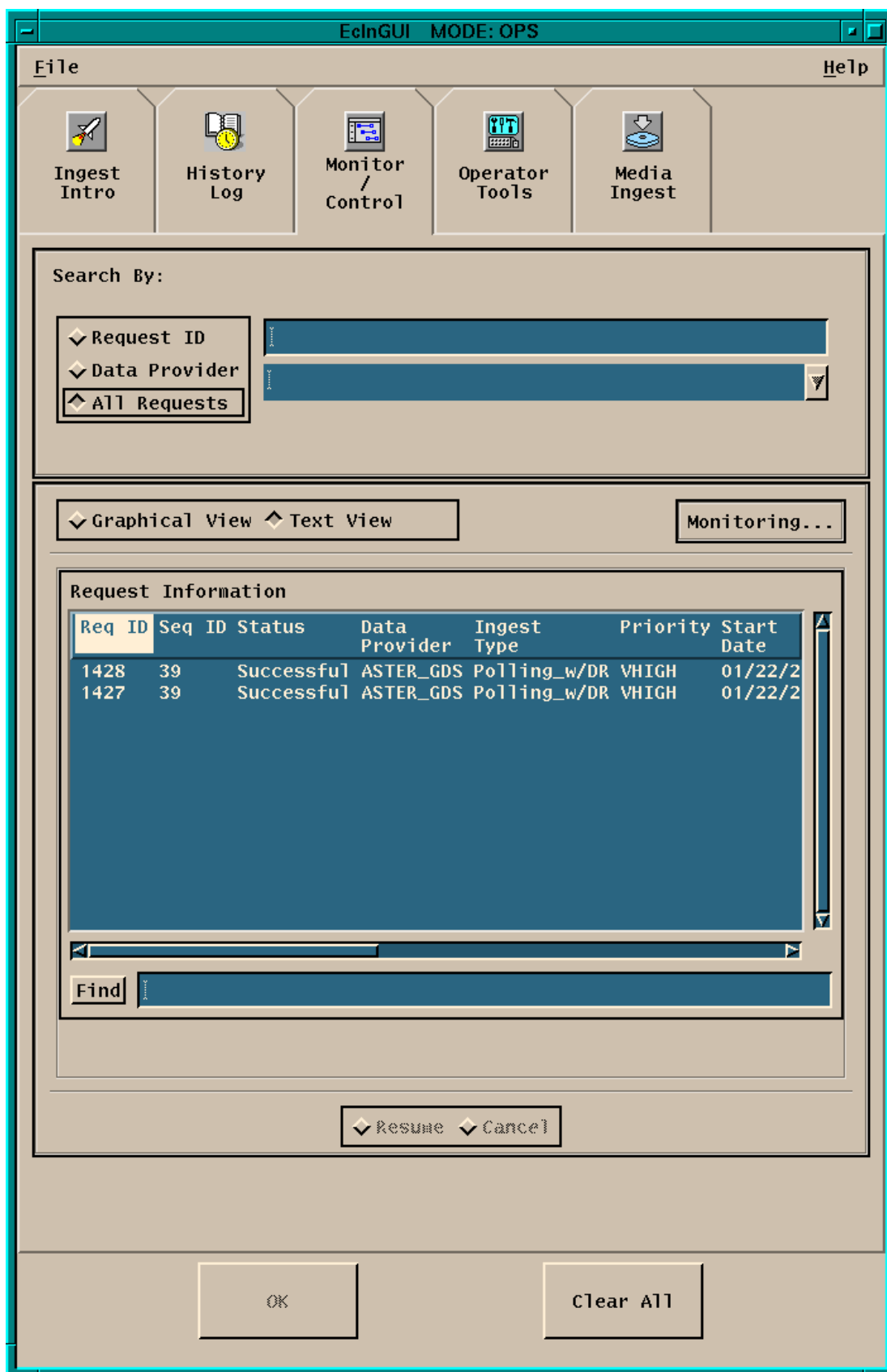


Figure 4.6.1-3. Monitor/Control Tab (Text View)

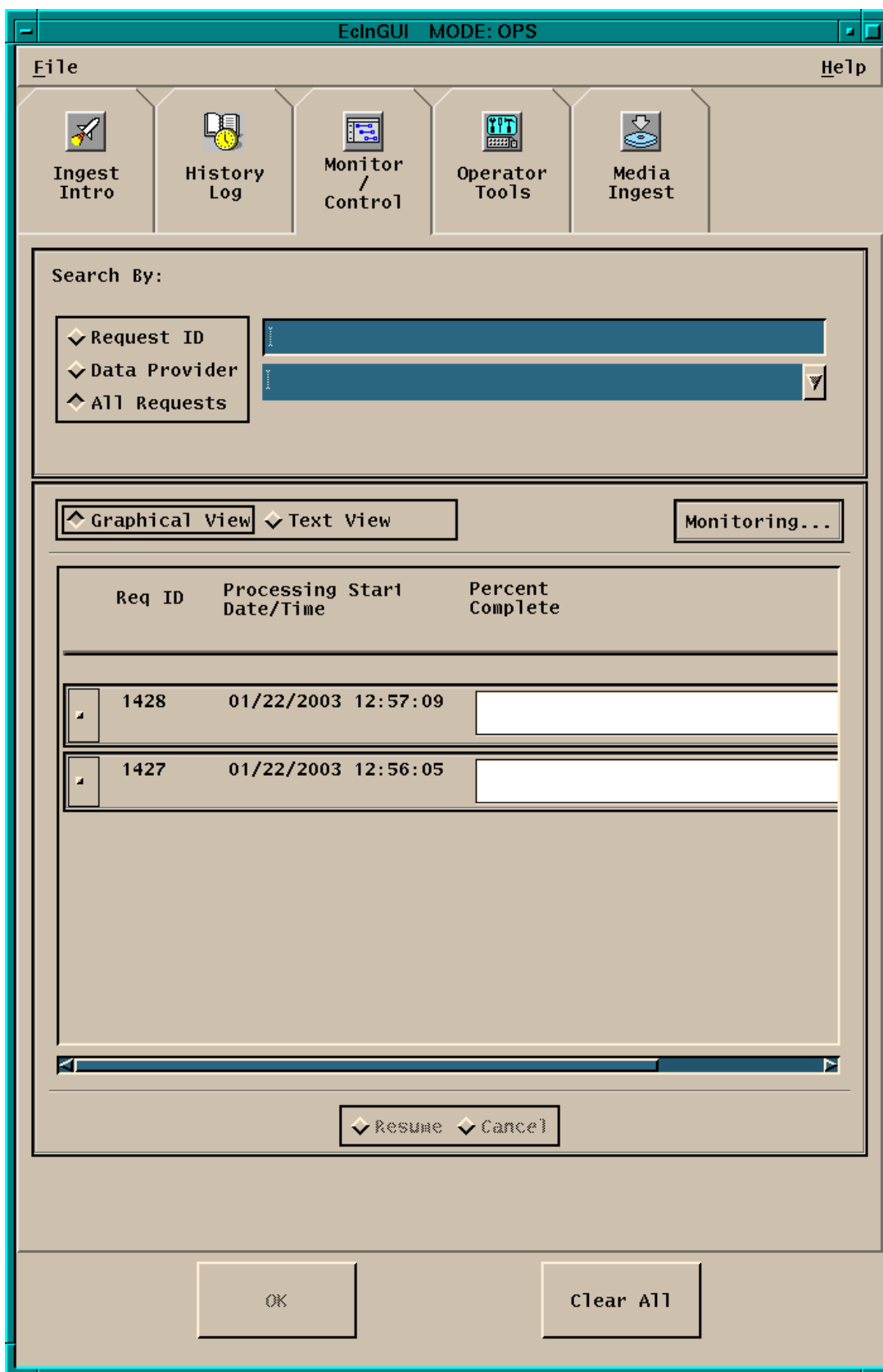


Figure 4.6.1-4. Monitor/Control Tab (Graphical View)

Table 4.6.1-3 describes the fields available on the Monitor/Control tab.

Table 4.6.1-3. Ingest Monitor/Control Tab Field Descriptions

Field Name	Data Type	Size	Entry	Description
Request ID	Integer	N/A	Operator Selected	Searches for a specific request currently in the ingest system.

Additional functionality is offered to the operator through the following graphical components:

- The “**File**” pull down menu that provides **exit** capability;
- The “**Help**” pull down menu that displays general and context-sensitive help;
- The “**Monitoring/Control...**” event label is used to display the current state of the underlining process. “**Monitoring...**” lets the operator view the list of the current requests, with information including the **Request ID**, the **Processing Start Date/Time**, and the **Percent Complete** in the Graphical view and the **Request Id**, the **Status**, the **Data Provider**, the **Ingest Type**, the **Priority**, and the **Start Date** in the Text View. “**Control...**” allows the operator to cancel or resume a request or a granule from a list;
- The pull down list “**Data Provider**”, which allows the operator to select from a list of valid external data providers;
- The “**All Requests**” radio button that displays all requests currently in the system;
- The “**Resume**” radio button that resumes the processing of a previously suspended ingest request on either request or granule level; multiple requests can be selected and resumed at one time on the request level; the resume button is active if the first highlighted request can be resumed;
- The “**Cancel**” radio button that aborts the processing of an ongoing ingest request on either request or granule level; multiple requests can be selected and canceled at one time on the request level; the cancel button is active if the first highlighted request can be cancelled;
- The sort capability at the request level is on all fields except “**End Date**” and “**End Time**” in text view; fields sort in descending order, except the “**Req ID**” field which sorts in ascending order.

4.6.1.2.3 Operator Tools Tab

Clicking on the Operator Tools tab brings up the Operator Tools window shown in Figure 4.6.1-5. This tab provides the means to set system-level and data provider-level threshold and setup information for simple throttling of the ingest process. In particular, operations staff may control both the number of requests to be processed concurrently and the amount of data to be ingested concurrently (for the entire site and for each data provider individually). Note: All system-level and data provider-level thresholds and setup information have initial values at the time of delivery.

The **Operator Tools** tab is divided into three sub-tabs:

- **Modify External Data Provider / User Information** sub-tab allows setup of thresholds and user information for external data providers, including authorized science users who interactively request data ingest (see Figure 4.6.1-5)
- **Modify System Parameters** sub-tab allows setup of thresholds and system information on a system-wide basis (see Figure 4.6.1-7)
- **File Transfer** sub-tab allows setup of external node information (see Figure 4.6.1-8)

See Tables 4.6.1-4, 4.6.1-6, and 4.6.1-7 below for a description of fields that appear, respectively, in the **Modify External Data/User Information**, **Modify System Parameters**, and **File Transfer** sub-tabs.

In addition to the above input fields, the three Operator Tools tabs include other graphical elements that provide additional functionality to the operator.

“**File**” and “**Help**” pulldown menus allow for exiting the capability and displaying of context sensitive help information, respectively.

EclnGUI
MODE: DEV02

File
Help

Ingest Intro

History Log

Monitor / Control

Operator Tools

Media Ingest

Modify External Data Provider / User Information

Modify System Parameters

File Transfer

Data Provider
Landsat-7

FTP Username

FTP Password

Email Address

HTML Password

CDS Entry Name

Server Destination UUID

Volume Threshold

Current: 10000

New:
MB

Request Threshold

Current: 40

New:

Priority Level

Current: VHIGH

New:

Figure 4.6.1-5. Operator Tools - External Data Provider/User Information Sub-tab

The Modify External Data Provider/User Information sub-tab includes a pull down list that allows for the selection of valid External **Data Provider** IDs. The operator clicks on **OK** to implement the changes or **Clear All** to delete all the modifications operated so far.

Table 4.6.1-4. Operator Tools - External Data/User information Tab
Field Descriptions

Field Name	Data Type	Size	Entry	Description
FTP Username	Text Field	10	Operator Selected (Default = current value or blank, if no current value exists)	Username of the external data provider at a remote node holding data.
FTP Password	Text Field	30	Operator Selected (Default = blank)	<ul style="list-style-type: none"> • Provides an input entry field for FTP Password • The FTP Password is NOT reflected to the screen when the operator inputs information (and is encrypted prior to storage)
Email Address	Text Field	255	Operator Selected (Default = blank)	Email address of external data provider.
HTML Password	Text Field	30	Operator Selected (Default = blank)	<ul style="list-style-type: none"> • Not used
CDS Entry Name	Text Field	255	Operator Selected (Default = current value or blank, if no current value exists)	Provides the CDS entry for the given data provider.
Server Destination UUID	Text Field	36	Operator Selected (Default = current value or blank, if no current value exists)	Provides the UUID for the given data provider.
Volume Threshold	Integer	N/A	Operator Selected	Provides the current ingest volume threshold for the given data provider and an input area to set a new value.
Request Threshold	Integer	N/A	Operator Selected	Provides the current ingest request threshold for the given data provider and an input area to set a new value.

The **Priority Level** of the Data Provider can be changed using a list of valid priority levels (default is VHIGH).

If the toggle button **Update Notify Parameters** is selected in the **External Data Provider/User Information** sub-tab the **Notify Parameter** pop-up appears as shown in Figure 4.6.1-6.

Table 4.6.1-5 describes the fields contained in this pop-up. With the **OK** and **Cancel** buttons on the Notify Parameter, the operator can accept or delete the changes made.

Notify Parameters

Notify FTP Node

Notify FTP Directory

Notify FTP Username

Notify FTP Password

OK

OK

Cancel

Figure 4.6.1-6. Update Notify Parameters Pop-up

Table 4.6.1-5 describes the fields on the Update Notify Parameters Pop-up.

Table 4.6.1-5. Update Notify Parameters Field Descriptions

Field Name	Data Type	Size	Entry	Description
Notify FTP Node	Text Field	255	Operator Selected (Default = blank)	Provides Notify FTP node for the given data provider.
Notify FTP Directory	Text Field	255	Operator Selected (Default = blank)	Provides Notify FTP directory for the given data provider.
Notify FTP Username	Text Field	10	Operator Selected (Default = blank)	Provides Notify FTP username for the given data provider.
Notify FTP Password	Text Field	30	Operator Selected (Default = blank)	<ul style="list-style-type: none">• Provides an input entry field for Notify FTP Password• The Notify FTP Password is NOT reflected to the screen when the operator inputs information (and is encrypted prior to storage)

Figure 4.6.1-5 is the Modify System Parameters sub-tab.

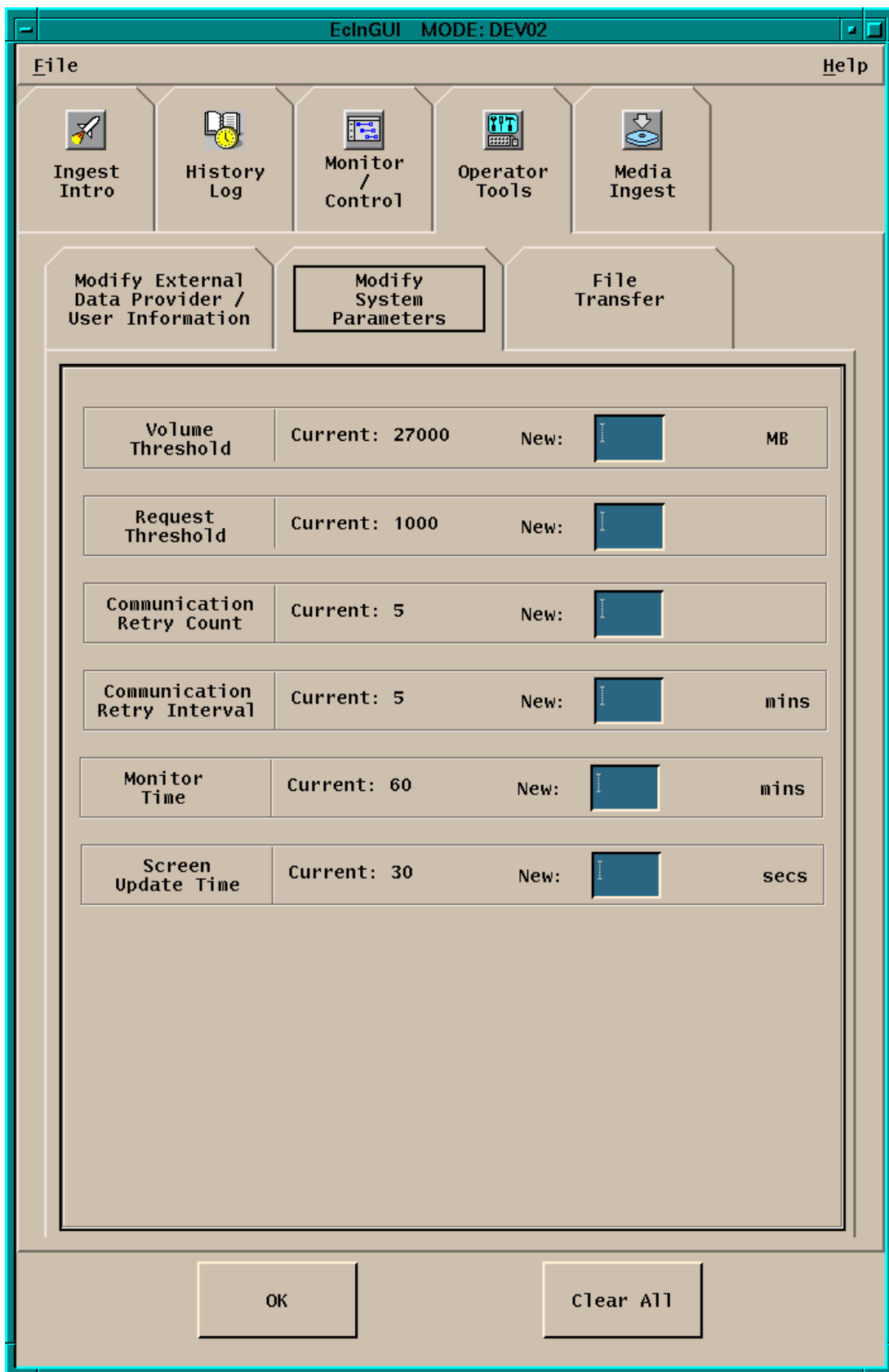


Figure 4.6.1-7. Operator Tools - Modify System Parameters Sub-tab

Table 4.6.1-6 describes the fields on the Modify System Parameters sub-tab.

**Table 4.6.1-6. Operator Tools Modify System Parameters
Field Descriptions**

Field Name	Data Type	Size	Entry	Description
Volume Threshold	Integer	N/A	Operator Selected (Default = current value)	Provides the current system volume threshold and an input area to set a new value.
Request Threshold	Integer	N/A	Operator Selected (Default = current value)	Provides the current system setting for ingest maximum requests and an input area to set a new value.
Communication Retry Count	Integer	N/A	Operator Selected (Default = current value)	Provides the current Communication Retry Count and an input area to set a new Communication Retry Count.
Communication Retry Interval	Integer	N/A	Operator Selected (Default = current value)	Provides the current system setting for communication retry interval in minutes and an input area to set a new value.
Monitor Time	Integer	N/A	Operator Selected (Default = current value)	<ul style="list-style-type: none"> • Provides the current amount of time (in minutes) that a completed request is retained on the monitoring display prior to removal • Provides an input area to set a new monitor time
Screen Update Time	Integer	N/A	Operator Selected (Default = current value)	<ul style="list-style-type: none"> • Provides the current system setting for screen update interval in seconds and an input area to set a new value

The **OK** and **Clear All** buttons allow operators to accept or delete changes to the System Parameters.

Figure 4.6.1-8 is the File Transfer sub-tab.

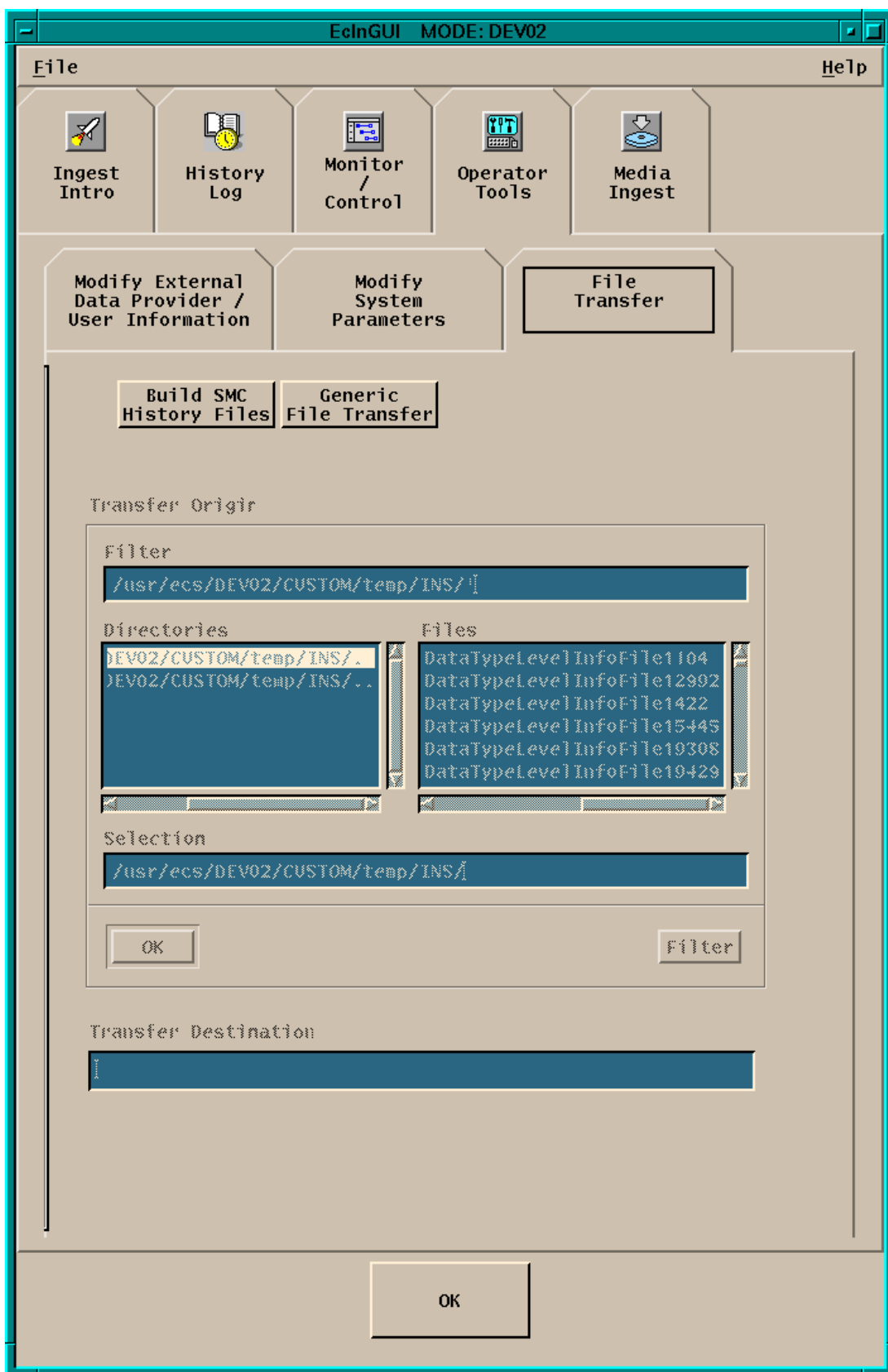


Figure 4.6.1-8. Operator Tools - File Transfer Sub-tab

Table 4.6.1-7 describes the fields on the File Transfer sub-tab.

Table 4.6.1-7. Operator Tools - File Transfer Field Descriptions

Field Name	Data Type	Size	Entry	Description
Filter	Text Field	Unlimited	Operator Selected	Provides a default directory for file selection.
Selection	Text Field	Unlimited	Operator Selected	Provides the name of file for transfer.
Transfer Destination	Text Field	Unlimited	Operator Selected	Provides the file transfer destination.
Directories	Character	Unlimited	System Generated	List of directory available for filtering.
Files	Character	Unlimited	System Generated	List of files available for filtering.

The buttons at the top of the window allow specifying if the operation objective is to perform a **Generic File Transfer** or to **Build SMC History Files**. With the **OK** button, the operator initiates the desired file transfer.

4.6.1.2.4 Media Ingest Tab

Clicking on the Media Ingest tab brings up the **Media Ingest** window as shown in Figure 4.6.1-9. This tab provides DAAC operations personnel with the capability to perform media ingest (e.g., specifying media for ingest, such as 8mm tape).

The Ingest Media Ingest tab is divided into three regions:

- Media Type – allows the operator to select two types of media (8mm tape and DTF tape)
- Data Provider and Media ID – allows the operator to specify data provider ID and Media ID. The Media ID needs to match the Media ID loaded into the stacker/drive using the STMGT GUI.
- Data Delivery Record File Location– allows the operator to specify the location of the media data delivery record file, which is required for media ingest. The file could either be embedded in the hard media or be made available electronically. If not embedded on the hard media, the Delivery Record file must be in an ECS disk location. The external data provider must connect with that location via ftp prior to delivering the hard media to ECS.

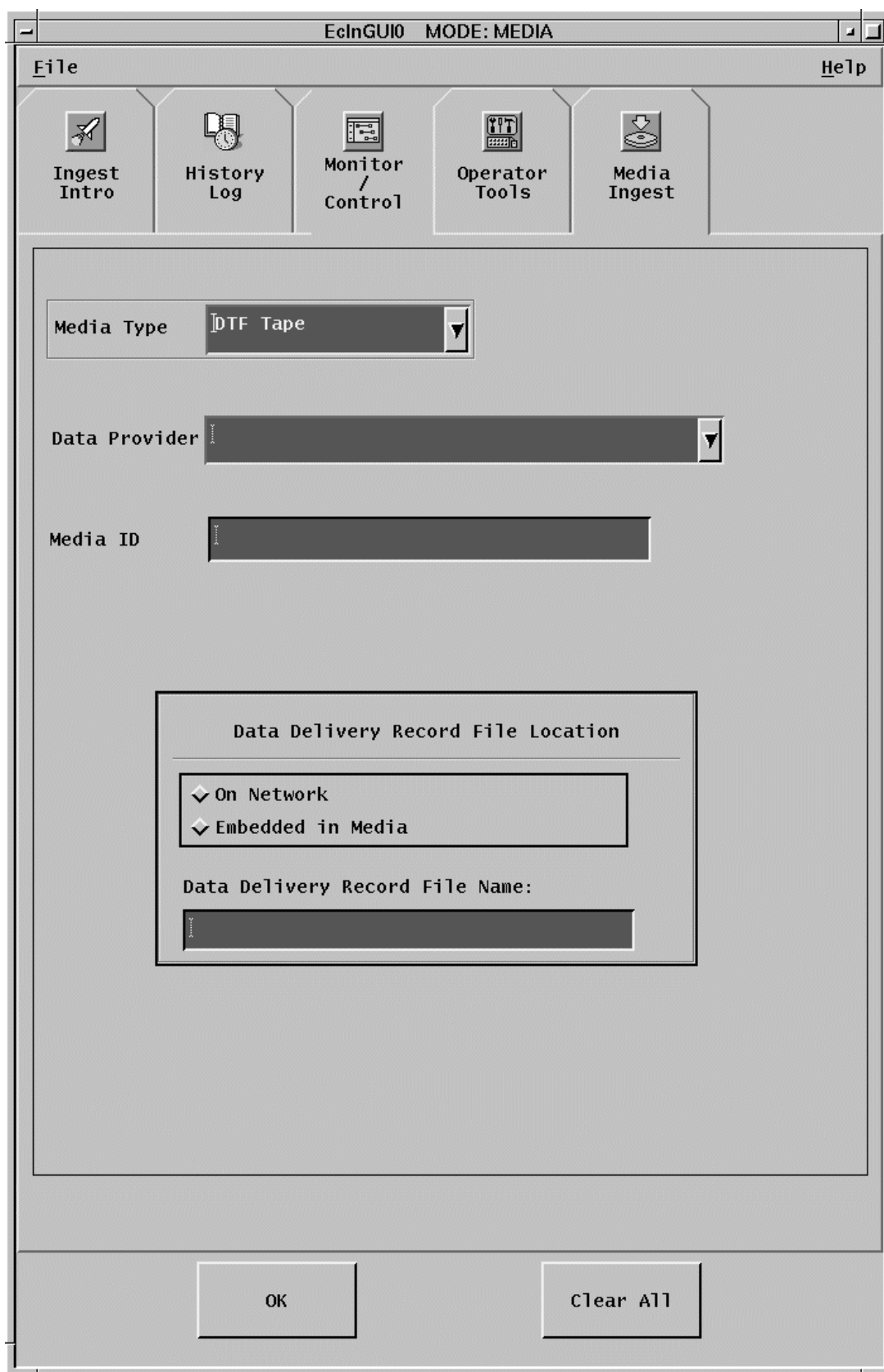


Figure 4.6.1-9. Media Ingest Tab

Table 4.6.1-8 describes the fields on the Ingest Media tab.

Table 4.6.1-8. Ingest Media Field Descriptions

Field Name	Data Type	Size	Entry	Description
Media ID	Integer	N/A	Operator Selected	Media Volume ID input.
Data Delivery Record File Name	Character	Unlimited	Operator Selected	Name of the Data Delivery Record file.

Media Type and **Data Provider** can be selected from lists of valid names. The location of the Data Delivery Record file can be selected through by toggling the **On Network** and **Embedded in Media** buttons.

With the **OK** and **Clear All** buttons the Operator can accept start the Ingest session or delete the entries input in any of the fields.

4.6.1.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDx-013 “Custom Code Configuration Parameters” documentation series. The “x” refers to the installed location (e.g., 920-TDG-013 is for the GSFC DAAC). These documents can be found in the Technical Documents of the ECS Baseline Information System.

The following Table 4.6.1-9 identifies the supporting products the Data Ingest depend upon in order to function properly in the ECS environment:

Table 4.6.1-9. ECS Data Ingest Product Dependency

Product Dependence	Protocol Used	Comments
INS GUI	X-11	Via client libraries.
INS GUI and ReqMgr	TCP/IP	Via RPC call.

4.6.1.4 Databases

The ECS Data Ingest Tool interfaces with the Ingest Database. For details about the design and schema of the Ingest Database refer to 311-CD-601-001, *Ingest Database Design and Schema Specifications*.

4.6.1.5 Special Constraints

None.

4.6.1.6 Outputs

Operations staff has access to three output logs, described in Table 4.6.1-10.

Table 4.6.1-10. Outputs

Output	Description and Format
Ingest history log	The Ingest history log contains summary information about ingest request status. Stored in Sybase.
MSS event log	The MSS event log contains critical events of interest to DAAC operations staff. Stored in MSS.
Ingest event log	The Ingest event log contains critical and detailed events of interest to DAAC operations staff. Stored in a flat file.

4.6.1.7 Event and Error Messages

The Ingest interface issues both status and error messages to the event log file. Error messages fall under the following categories: common messages, history log messages, ingest media ingest messages, ingest request controller messages, and ingest threshold controller messages. Both event and error messages are listed in Appendix A.

4.6.1.8 Ingest Reports

In addition to ad hoc ongoing request status displays discussed above, the Ingest subsystem provides the standard reports described in Table 4.6.1-11. These reports can be invoked through the History Log Tab discussed in Section 4.6.1.2.1.

Table 4.6.1-11. Standard Ingest Production Reports

Report Type	Report Description	When and Why Used
Ingest Request History Report	The report supplies operations staff with a view of ingest request completion performance. It provides a detailed log of the ingest requests in the reporting period (including requester, data source, data type, the times of various ingest events such as request receipt and completion, data volume, etc.). The report also provides summary statistics for the reporting period, such as completed vs. unsuccessful requests, backlog development, average ingest volumes and processing times broken down by various categories.	The report may be generated for specified time periods and executed on a regular basis (based on site policy).
Ingest Request Performance Report	The report supplies operations staff with a view of ingest performance. It provides summary statistics for the reporting period, such as completed vs. unsuccessful requests, backlog development, average ingest volumes and processing times broken down by various categories.	The report may be generated for specified time periods and executed on a regular basis (based on site policy).
Ingest Granule Performance Report	The report supplies operations staff with a view of ingest granule-level performance. It provides summary statistics for the reporting period, such as completed vs. unsuccessful requests, backlog development, average ingest volumes and processing times broken down by various categories.	The report may be generated for specified time periods and executed on a regular basis (based on site policy).

4.6.1.8.1 Sample History Reports

An example Ingest Request History Report is shown in Figure 4.6.1-10.

Req ID	Data Provider	Compl. Status	Ingest Type	Start Time	End Time	Total Granules	Success Granules	Data Volume	File Count	Transfer Time	Pre - Proc Time	Archive Time	Priority	Restart Flag
00100	TSDIS	OK	PD	01-05-97 12:31:06	01-05-97 13:51:16	1	1	112.5	5	53.6	3.2	23.4	----	---
.....	-----	-----

Figure 4.6.1-10. Sample Ingest Request History Report

An example Ingest Request Performance Report is shown in Figure 4.6.1-11.

Data Provider	Total Requests	Total Request Errors	Granules Avg | Max		Files Avg | Max		Size Avg | Max		Transfer Time Avg | Max		Pre - Proc Time Avg | Max		Archive Time Avg | Max	
SDPF	112	2	24	112	62	336	106.5	114.5	51	105	7	23	12	212
TSDIS	.....	.....										

Figure 4.6.1-11. Sample Ingest Request Performance Report

An example Ingest Granule Performance Report is shown in Figure 4.6.1-12.

Data Provider	Data Type	Total Granules	Total Granules with Errors	Files Avg|Max		Granule Vol. Avg | Max		Transfer Time Avg | Max		Pre - Proc Time Avg | Max		Archive Time Avg | Max	
SDPF	CER00	112	2	62	336	106.5	114.5	51	105	7	23	12	212
SDPF	....	.....	.....			.....	.....	.....	.....	.....	.....	.....	.....

Figure 4.6.1-12. Sample Ingest Granule Performance Report

This page intentionally left blank.

4.6.2 Regenerate Failed PDR Tool

The Regenerate Failed PDR tool provides the ECS Operations Staff with the capability to generate a Product Delivery Record (PDR) for each failed granule in a PDR and copy the generated PDRs to an Ingest polling directory using a command line interface. This tool can be used when a PDR fails with a long Production Acceptance Notification (PAN) message file. A long PAN means that the request had more than one granule and not all granules had the same error. The purpose of the tool is to provide a means for the ECS Operations Staff to easily resubmit only failed granules to Ingest polling, rather than having to manually edit the original PDR file or resubmit all of the granules, which would create duplicate granules in the archive.

4.6.2.1 Quick Start Using the Regenerate Failed PDR Tool

Entering the following command starts the regenerate failed PDR tool:

>EcInRegenFailedPDRStart <mode>

The **mode** parameter specifies the mode in which the program is to run. The tool can run in any mode (e.g., OPS, TS1 or TS2). The DAAC operations staff establishes the modes.

4.6.2.2 Regenerate Failed PDR Tool Main Screen

There is no Graphical User Interface for the Regenerate Failed PDR tool. The DAAC operations user interacts with the Regenerate Failed PDR Tool by responding to the following prompts output by the program.

1. Generate PDRs

2. Quit

>> 1

Please enter PDR filename with path

>>

Please enter PAN filename with path

>>

Please enter the path of the Polling directory into which the PDRs should be copied

>>

The new PDR file <filename> was created successfully.

Please inspect this PDR file and correct any errors found.

Do you want this PDR to be moved to the Polling directory (y/n)?

If n is entered:

Do you want to delete the PDR file <filename> (y/n)?

4.6.2.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series.

4.6.2.3.1 Interfaces and Data Types

The Regenerate Failed PDR tool is a stand-alone tool, so it has no dependencies on supporting products.

4.6.2.4 Databases

The Regenerate Failed PDR tool does not include the direct managing of or interfacing with any database.

4.6.2.5 Special Constraints

The Regenerate Failed PDR Tool needs to have access to the PDR and PAN files, which are to be used. It also needs to have access to the Ingest polling directory into which the generated PDRs are to be moved. Note also that the Regenerate Failed PDR Tool is started through a start script, which specifies that the EcInRegenFailedPDR.CFG configuration file be used to initialize the environment.

4.6.2.6 Outputs

The Regenerate Failed PDR Tool's output consists of prompts returned to the command line interface, error messages returned to the command line interface as described in Section 4.6.2.7, messages written to the application log file (EcInRegenFailedPDR.ALOG), and the generated PDR files.

4.6.2.7 Event and Error Messages

Refer to Appendix A for the error messages displayed by the Regenerate Failed PDR Tool.

4.6.2.8 Reports

None.

4.7 Resource Planning

This section describes the Resource Planning tools used by DAAC operators. These tools are accessible through Resource Planning GUIs.

This page intentionally left blank.

4.7.1 Resource Planning

Resource planning is accomplished by operations through a Resource Editor tool used to define the resources allocated to run production data and a Resource Scheduler GUI used to create resource reservations. The Resource Scheduler can also display resource reservations on a time line.

The Resource Editor GUI can define hardware resources such as disks and host computers ('real computers') as well as virtual resources such as 'virtual computers,' which are the collections of CPUs and disks. The list of resources can be created from scratch or they can be initially obtained from a resource configuration in MSS.

A resource plan is defined by a set of approved resource reservations. The resource planner to create, validate and approve reservations until a conflict-free plan is achieved uses the Resource Scheduler GUI. At this point, the reservations are "committed" and the reservations become ground events. The Ground Event activities include maintenance, test, and training.

Table 4.7.1-1 provides a high level summary of the activities of the Resource Planning GUIs.

Table 4.7.1-1. Common ECS Operator Functions Performed with Resource Planning GUIs (1 of 2)

Operating Function	GUIs Involved	Description	When and Why to Use
Ingest /create and modify resource configuration.	Resource Editor, Virtual Computer Details, Disk Details, Hardware Details, String Details, Real Computer Details, AutoSys Details.	Obtains from the MSS CM system a list of system resources that are used for resource planning and to edit/add to these resource items.	<ul style="list-style-type: none">• To define system resources.• To add and modify resources.
Enter a resource reservation request.	Resource Scheduler, Reservation Edit/Definition, Resource Selection, Intervals Selection.	The resource planner enters a request for a resource reservation.	To define the resource reservation for testing or maintenance.
Review resource reservation requests in the system.	Resource Scheduler, Reservation Edit/Definition, Resource Selection, Intervals Selection.	The resource planner reviews the resource reservations that have been made.	To support resource allocation process, to aid in preparing a resource reservation request, or to inspect the use of system resources.

Table 4.7.1-1. Common ECS Operator Functions Performed with Resource Planning GUIs (2 of 2)

Operating Function	GUIs Involved	Description	When and Why to Use
Commit approved resources.	Resource Scheduler	The resource planner allocates a resource to a particular activity.	To register the reservation as the ground event.
Review Timeline.	Resource Reservation Planning Master Timeline	A timeline oriented view of resource allocation for all configured system resources.	To aid in planning resource use within the system.

4.7.1.1 Quick Start Using Resource Planning

There are two main applications associated with Resource Planning:

- **Resource Scheduler GUI** is used to enter a new resource reservation, to modify an existing resource reservation request, to approve a resource reservation, to commit approved resource reservations, to view a timeline format display of all approved resource reservations, and to delete an existing reservation.
- **Resource Editor GUI** is used to add or delete resources or modify the characteristics of resources.

To invoke the Resource Editor GUI from the command line, enter:

EcPIRpreStart <mode> <MSGSVR_ID>

<mode> is the ECS mode for the execution.

<MSGSVR_ID> is the TBS Server Identifier.

To execute the Resource Planning Scheduler from the command line, type:

EcPIRpsStart <mode> <MSGSRV_ID>

<mode> is the ECS mode for the execution.

<MSGSVR_ID> is the TBS Server Identifier.

4.7.1.2 Resource Scheduler Main Screen

Figure 4.7.1-1 is the Resource Scheduler GUI, which appears when the Resource Scheduler Icon is clicked. This GUI presents a list of the resource reservations entered into the system, with one line of information per resource reservation. The list can be filtered by activity type by clicking on the button displayed next to “Activity Type” at the top left of the screen. The selection button lists each of the activity types defined to resource planning, e.g., ‘Testing’. Selecting an activity from this list limits the display to resource reservations with that type of activity specified.

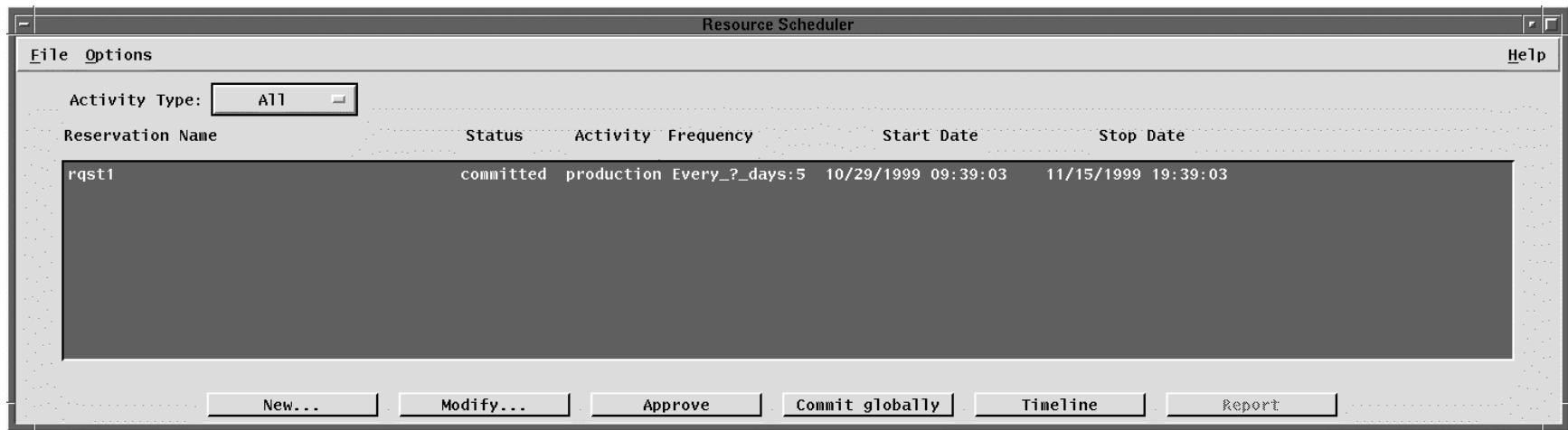


Figure 4.7.1-1. Resource Scheduler GUI

There are several buttons at the bottom of the GUI, which affect the status of the reservations. The functions associated to these buttons are also accessible from the menu bar. These buttons and their actions are:

- **New ...** - Used to enter a new resource reservation request. This brings up the Resource Reservation Request Edit/Definition GUI described in the Section 4.7.1.1.3.
- **Modify ...** - Used to edit or review the details of an existing resource reservation request. First select a resource reservation entry from the list in the Resource Planning GUI, and then click on 'Modify...' This brings up the Resource Reservation Request Edit/Definition GUI for the selected resource reservation
- **Approve** - Used to indicate that all reviews associated with the resource planning process have taken place and there are no objections to the resource usage as described by the request. Clicking on this button checks if there is any conflict between this resource reservation and other reservations. Error messages are displayed if conflicts are detected
- **Commit globally** - Commits all approved resource reservations. At this point, the information related to the activity and its reserved resources is accessible by the production planning software.
- **Timeline** - Displays a timeline-oriented view of the resource plan in the Resource Reservation Plan Timeline GUI. This GUI is discussed further in Section 4.7.1.1.4.
- In addition, on the menu bar, the pulldown menus provide the following capabilities.
- 'File' Pulldown:
 - **New** - Same as the 'New' button on the GUI - used to enter a new resource reservation request.
 - **Open** - Same as the 'Modify...' button on the GUI - used to update information for an existing resource reservation request.
 - **Delete** - deletes a resource reservation request.
 - **Exit** - exits the application.
- 'Options' Pulldown:
 - **Timeline** - Same as the 'Timeline' button on the GUI - used to display a timeline-oriented view of the resource plan.

4.7.1.2.1 Resource Reservation Request Edit/Definition GUI

From the Resource Planning GUI, a user enters a new resource reservation, or reviews an existing resource reservation. Either selection displays the Resource Reservation Request Edit/Definition GUI shown in Figure 4.7.1-2.

Resource Reservation Request Edit/Definition – Modify

Request Name:

Edited Date:

Originator:

Sponsor:

Activity: Priority:

Description:

Start Day as "MM/DD/YYYY" Start Time as "HH:MM:SS"

Stop Day as "MM/DD/YYYY" Stop Time as "HH:MM:SS"

Frequency:

☒ Rejected
 ☒ Validated
 Status:

Comments:

Figure 4.7.1-2. Resource Reservation Request Edit/Definition GUI

Table 4.7.1-2 describes the fields of the Resource Reservation Request Edit/Definition GUI.

**Table 4.7.1-2. Resource Reservation Request Edit/Definition GUI
Field Description**

Field Name	Data Type	Size (# of characters)	Entry	Description
Request Name	ASCII characters	<= 40	User input, required	A name for the resource request.
Edited Date	Date	40	System generated	Date of resource request entry.
Originator	ASCII characters	<= 30	System generated	Userid of the user entering the resource request.
Sponsor	ASCII characters	<= 30	User input	Name of the individual designated to review and validate the Resource Request for completeness, etc.
Priority	Integer	3	User provided	The priority for the activity.
Description	ASCII characters	30	User provided, optional	User description of the activity for which the resource is required.
Start Day	Date	10	User provided, required	The start date of the resource request.
Start Time	Time	8	User provided, required	The start time of the resource request.
Stop Day	Date	10	User provided, required	If the reservation is to be repeated at some frequency, the stop date specifies the end date for the repeated request.
Stop Time	Time	8	User provided, required	The stop time of the resource request.
Frequency:	Resource reservation request repeat interval.	-	User provided, required	The Frequency: pulldown menu offers the options listed in Table 4.7.1-3 to specify how the resource request should be repeated over the term from Start Time to Stop Time. If the "Every_?_days" is selected, the user enters the interval in days in the associated text field to the right.
Status	ASCII characters	<= 20	System generated	Displays the status of the request, e.g., 'approved', 'validated', etc.
Comment	ASCII characters	Unlimited	User provided, optional	User comment on the resource reservation request.

Selecting the '**Resources ...**' button displays the Resources Selection GUI, shown in Figure 4.7.1-3, that displays two lists, one containing all of the available resources and the other listing the resources that the operator selects for incorporation into the resource reservation. The user selects the desired resource by means of the arrow buttons. The name of the resource request is displayed, once the reservation is saved.

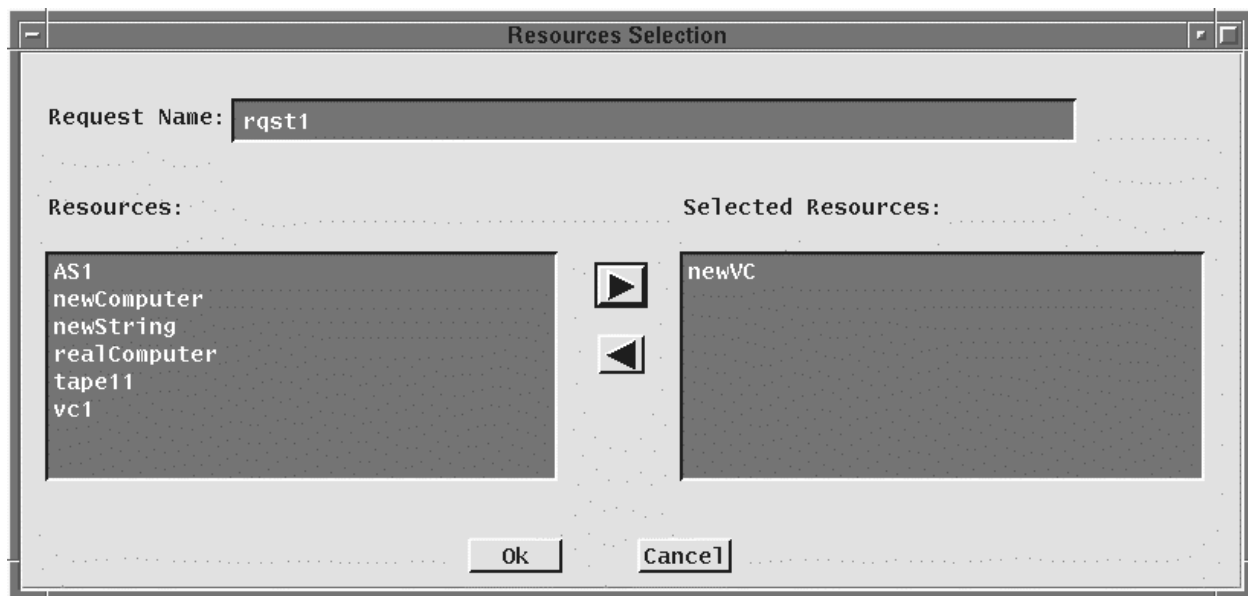


Figure 4.7.1-3. Resources Selection GUI

In the time period specification region of the Resource Reservation Request Edit/Definition GUI, the user can specify the frequency of occurrence of a repeating resource request. Several options for expressing the frequency are available in the '**Frequency**' selection list box combined with a text field that provides a qualifier. The available frequency options are listed in Table 4.7.1-3.

Table 4.7.1-3. Frequency Qualifiers for Resource Reservation Request Edit/Definition GUI (1 of 2)

Frequency Specifier	Text Qualifier	Result
Once	--	The default. Resource reservation covering the period from the start time and stop time for the start date specified.
Monthly	--	Resource reservation for every month on the start day of the month, repeated until the end date as specified.
Daily	--	Resource reservation for every day, between the start date and end date, for the start time and end time specified.
Every M-W-F	--	Resource reservation for every Monday, Wednesday, and Friday, between the start date and end date, for the start time and end time specified.
Every M-through-F	--	Resource reservation for every Monday through Friday, between the start date and end date, for the start time and end time specified.
Every T, Th	--	Resource reservation for every Tuesday & Thursday, between the start date and end date, for the start time and end time specified.

**Table 4.7.1-3. Frequency Qualifiers for Resource Reservation Request
Edit/Definition GUI (2 of 2)**

Frequency Specifier	Text Qualifier	Result
Weekends	--	Resource reservation for every Saturday & Sunday, between the start date and end date, for the start time and end time specified.
'Every_?_days'	N-days	Resource reservation for every n-days, between the start date and end date, for the start time and end time specified.

The '**Intervals ...**' button provides the mechanism to tailor a 'Frequency' based request by overriding selected intervals. If the user selects the 'Intervals ...' button, the Intervals Selection GUI shown in Figure 4.7.1-4 is displayed, providing two lists. The window on the left displays a list of dates selected through the 'Frequency' button. The window on the right shows dates that the operator selects for exclusion from the initial interval. Items are moved from one list to the other by selecting the item and using the arrow keys. The name of the resource request is also displayed.

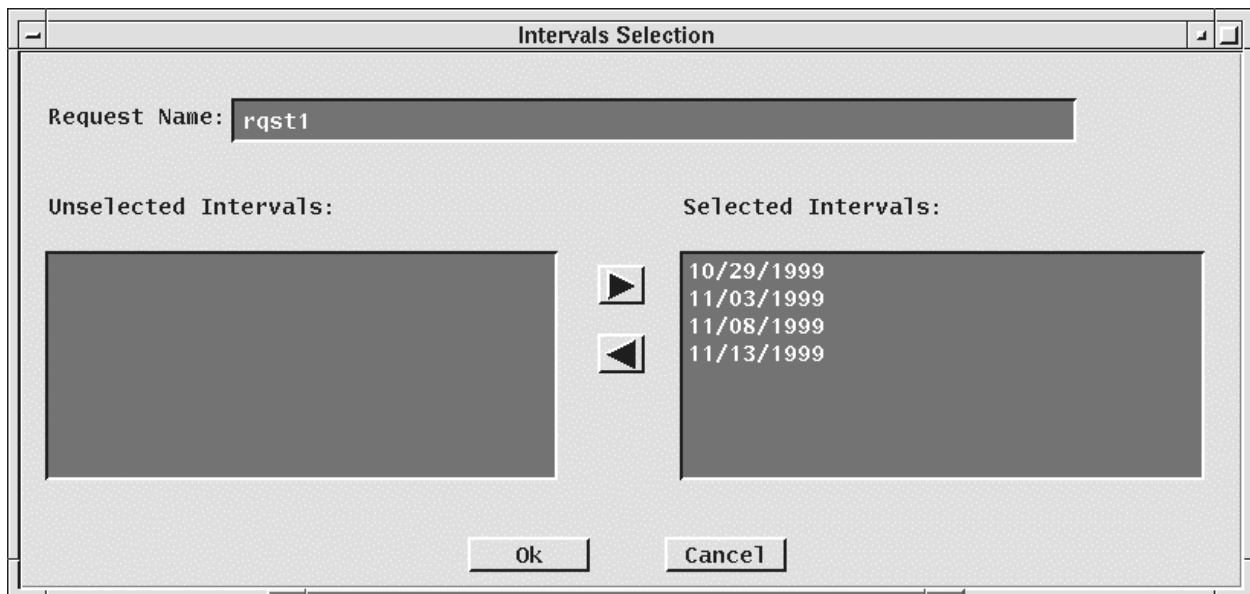


Figure 4.7.1-4. Intervals Selection GUI

4.7.1.2.2 Resource Reservation Planning Master Timeline GUI

From the Resource Planning GUI, the user can select the '**TimeLine**' button to view a timeline format display of all approved resource reservations, similar to the example displayed in Figure 4.7.1-5.

The Resource Reservation Planning Master Timeline GUI represents a set of resources, arranged along the left side of the GUI, and some period of time as indicated across the top edge of the GUI. One or more 'resource reservation' bars represent the use of a resource over a period of time across the GUI. A bar represents a time period during which a resource reservation has

been approved for the resource. Each bar has the name of the resource reservation. At those times where a reservation has not been placed against a resource, that resource is allocated to a default activity (which can vary by resource). For example, science-processing computers are used for science processing unless a reservation has been placed against them. Scroll bars allow scrolling up and down through the full list of resources and left and right in time. A select list of time span viewing options (e.g., 24-hours, 48-hours) at the lower left of the screen is available for selecting the time span of interest.

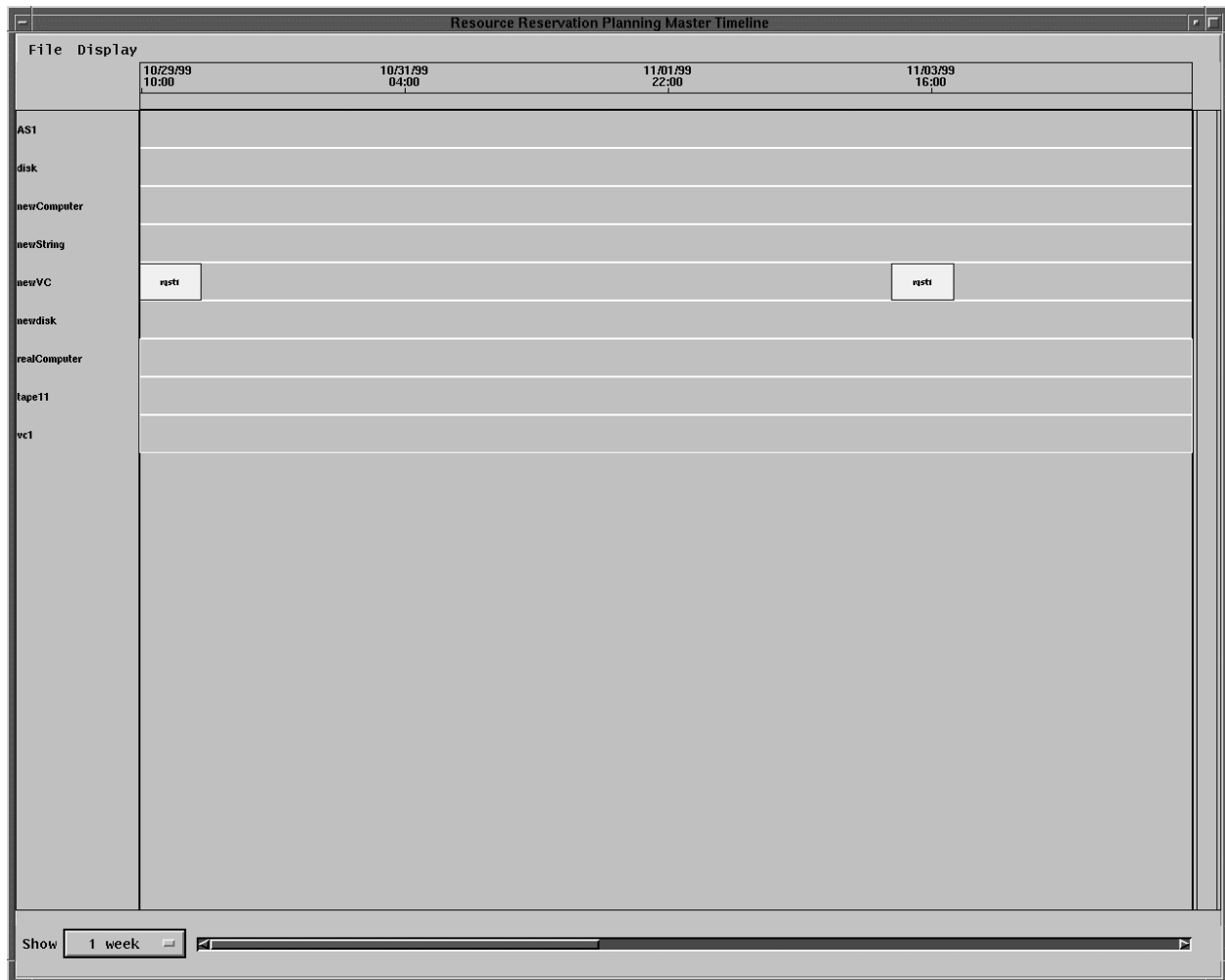


Figure 4.7.1-5. Resource Reservation Planning Master Timeline GUI

The capabilities to adjust some of the timeline display features (e.g., colors) are available through the pulldown menus located at the top of the GUI. These capabilities include:

- **'File' Pulldown:**
 - **Quit** - Exits this application and returns to the Resource Planning GUI
- **'Display' Pulldown:**
 - **Change Color** - Changes the color setup of the display.
 - **Change Resource** - Selects or filters the resources displayed in the timeline.

- **Change Timescale** - Changes the plan window start and stop time

4.7.1.2.2.1 Report Generator GUI

This functionality is documented in the Production Planning Generator command line interface (see Section 4.8.4).

4.7.1.3 Resource Editor GUI

The resource list can be created from scratch or be initialized from the MSS-managed configuration list, through a ‘fetch baseline’ operation. Resources can be added to or deleted from the resource list without affecting the MSS configuration list. This is useful, for example, for identifying resources available in the future for the purposes of planning. The Resource Editor GUI, shown in Figure 4.7.1-6, is the tool used for adding resources or modifying the characteristics of existing resources. On start-up, the Resource Editor GUI displays a list of the resources known to the resource-planning tool. To add a new resource the operator first selects a resource type using the **Resource Type** selection button I. Then the operator clicks on the ‘New...’button. The characteristics of an existing resource can be modified clicking on the resource in the resource list and clicking on ‘**Modify...**’ A resource can be removed by selecting it and clicking on ‘**Delete**’.

The retrieval of configuration information is a two-step process. First a Tivoli job is run (see Section 4.2.3) that generates a file of configuration information used by Resource Planning. Pressing the ‘Fetch Baseline’ button runs this job. When the Tivoli job has completed, press the ‘**Load Baseline**’ button to extract the needed information from the Tivoli generated file and load it into the PDPS database.

The GUIs for the definition of specific resource are discussed in the following subsections.

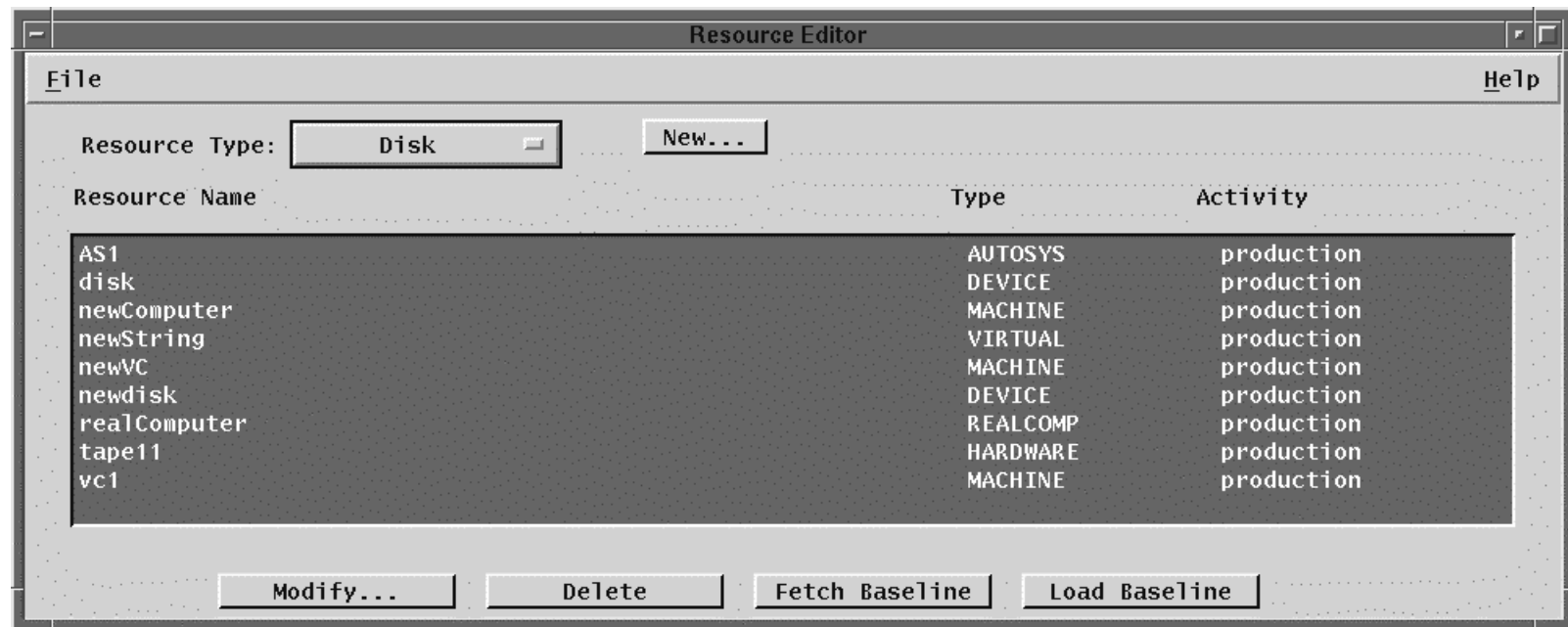


Figure 4.7.1-6. Resource Editor GUI

In addition, the ‘File’ pulldown located on the menu bar provides an ‘Exit’ option to leave the application.

4.7.1.3.1 Hardware Details GUI

The Hardware Details GUI, shown in Figure 4.7.1-7, is used to define the characteristics of generic hardware resources at the DAAC, such as communications equipment.

Figure 4.7.1-7. Hardware Details GUI

The characteristics of the other fields are described in Table 4.7.1-4.

Table 4.7.1-4. Hardware Details GUI Field Description

Field Name	Data Type	Size (characters)	Entry	Description
Resource Name	ASCII characters	<= 60	User provided, required.	A user defined name for the resource.
Comments	ASCII characters	Unlimited	User provided, optional.	User comment on the resource.

4.7.1.3.2 Disk Details GUI

The Disk Details GUI, shown in Figure 4.7.1-8, is used to define the characteristics of disk partition type resources.

Figure 4.7.1-8. Disk Details GUIs

The characteristics of the other fields are described in Table 4.7.1-5.

Table 4.7.1-5. Disk Resource Details GUI Field Description

Field Name	Data Type	Size (characters)	Entry	Description
Resource Name	ASCII characters	<= 60	User provided, required.	A user defined name for the resource.
Partition Size	Float	<= 10	User provided, required.	The size of the disk partition, in bytes.
Block Size	Integer	<= 6	User provided, required.	Block size used for the disk in bytes.
Comments	ASCII characters	Unlimited	User provided, optional.	User comment on the resource.

4.7.1.3.3 Virtual Computer Details GUI

The Virtual Computer Details GUI shown in Figure 4.7.1-9 is used to define the characteristics of virtual computer resources.

Virtual Computer Details

Resource Name: newComputer

Activity: production

Number of CPUs: 24

Total Ram: 1000000 MBytes

Operating System: IRIX 7.2

Disks

disk

Associated Disks

newdisk

Comments:

Save Cancel

Figure 4.7.1-9. Virtual Computer Details GUIs

The characteristics of the other fields are described in Table 4.7.1-6.

Table 4.7.1-6. Virtual Computer Details GUI Field Description

Field Name	Data Type	Size (characters)	Entry	Description
Resource Name	ASCII characters	<= 60	User provided, required	A user defined name for the computer.
Number of CPUs	Integer	<= 3	User provided, required.	The number of CPUs within the computer.
Total RAM	Integer	<= 7	User provided, required.	The total memory for the computer, in Mbytes.
Operating System	ASCII characters	<= 60	User provided, required.	The operating system name/version for the computer.
Disks	ASCII characters	<= 60	N/A	<ul style="list-style-type: none">• A list of the disks previously defined for that site• This list of disks is used to select from when a disk is associated (or disassociated) with the computer using the arrow buttons
Associated Disks	ASCII characters	<= 60	User provided, required.	Disks in this list are associated with the computer.
Comments	ASCII characters	Unlimited	User provided, optional.	User comment on the resource.

4.7.1.3.4 String Details GUI

The String Details GUI, shown in Figure 4.7.1-10, is used to define the characteristics of a string, or a collection of virtual computer resources.

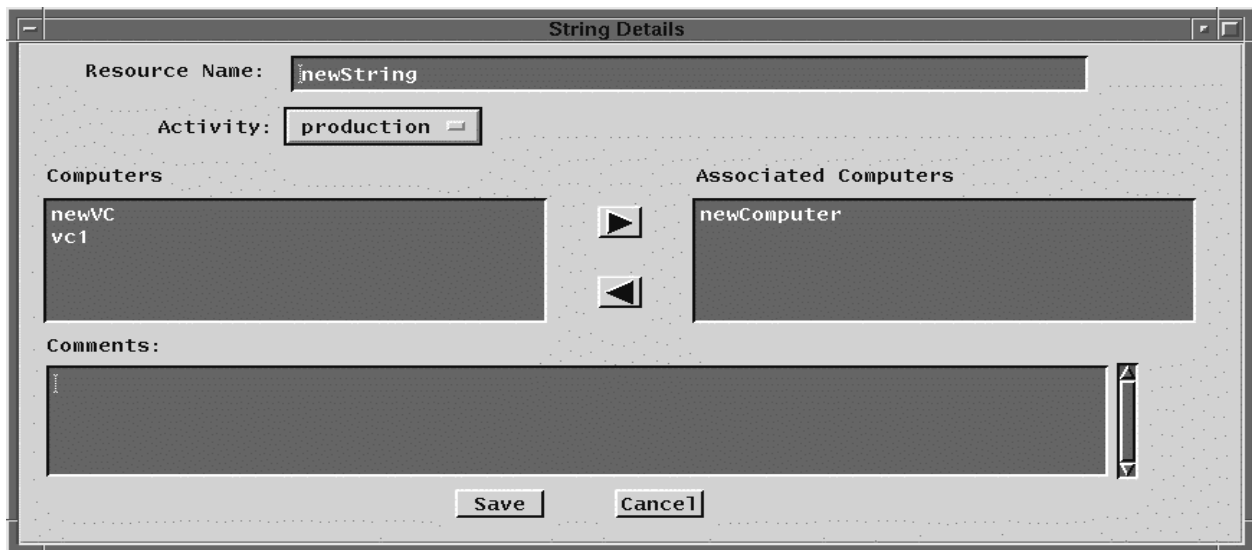


Figure 4.7.1-10. String Details GUIs

The characteristics of the other fields are described in Table 4.7.1-7.

Table 4.7.1-7. String GUI Field Description

Field Name	Data Type	Size (characters)	Entry	Description
Resource Name	ASCII characters	<= 60	User provided, required.	A user defined name for the resource.
Computers	ASCII characters	<= 60	N/A	A list of the computers previously defined for that site. This list of computers is used to select from when a computer is associated (or disassociated) with the string using the arrow buttons.
Associated Computers	ASCII characters	<=60	User provided, required.	Computers in this list are associated with the string.
Comments	ASCII characters	Unlimited	User provided, optional.	User comment on the resource.

Note that the Real Computer Details GUI and the Autosys Details GUI are similar to the String Details GUI. They are shown, respectively, in Figures 4.7.1-11 and 4.7.1-12.

Real Computer Details

Resource Name:

Activity:

Computers

newComputer

Associated Computers

newVC
vc1

Comments:

Figure 4.7.1-11. Real Computer Details GUIs



Figure 4.7.1-12. AutoSys Details GUIs

4.7.1.4 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series.

4.7.1.5 Databases

The Resource Planning GUIs relies on the PDPS database to provide all the necessary information at the start time as well as to save all the updated input data about Resource Planning and Resource Definition.

Information on the PDPS database is contained within the Production Planning tools portion of this document, Section 4.8.1.3.

4.7.1.6 Special Constraints

There are no special constraints associated with the Resource Planning tools.

4.7.1.7 Outputs

The Resource Planning tools provide output in three forms:

- Displays to the GUIs (described above)
- Updates to the PDPS database for planning (described in Section 4.8.1.3)
- Generates reports (described in Section 4.7.1.8).

4.7.1.8 Event and Error Messages

The resource planning tools provide informational messages or warnings for minor errors. Significant resource planning events or errors are logged to the MSS Event Log.

Both event and error messages are listed in Appendix A.

4.7.1.9 Reports

There are no reports generated.

4.8 Production Planning

This section describes the Production Planning GUIs used by DAAC operators.

The production planner to define the science processing jobs to be run at a DAAC uses the Production Planning GUIs. The jobs are defined in terms of Production Requests (PRs). A PR is essentially an order for data to be produced by the data processing subsystem. A single PR may lead to several jobs being run over time, or to a single job producing a single set of data. PRs apply to the processing of new data (standard PRs, or standing orders) or the reprocessing of existing data (reprocessing PRs).

The Planning subsystem uses the PR and information on the science processing software (known as a Product Generation Executive, or PGE) to prepare a Data Processing Request (DPR). A DPR corresponds to a single processing job.

Planning subsystem GUIs are used to enter or modify PRs, review DPRs, and produce a selection of production planning related reports. The production planner uses the GUIs to create plans for data processing from the PRs defined in the Production Planning Subsystem. The production planner to activate or cancel a plan also uses the GUIs.

The Production Planning GUIs are packaged into three applications: the Production Request Editor, the Production Planning Workbench, and the Production Strategies User Interface. The Production Request Editor and Production Planning Workbench are accessible through separate icons from the desktop.

This page intentionally left blank.

4.8.1 Production Request Editor

The Production Request Editor allows the user to create production requests, which produce data products. The Production Request Editor is used to perform the functions described in Table 4.8.1-1.

Table 4.8.1-1. Common ECS Operator Functions Performed with Production Request Editor

Operating Function	GUI	Description	When and Why to Use
Generate/Review /Edit Production Requests (PRs)	Production Request Editor -- PR Edit, PR List	<ul style="list-style-type: none">• The operator enters Production Request information• Production Requests define processing over a period of time	To process or reprocess ECS data. When a PR expires, a new one can be input.
Review Data Processing Requests (DPRs)	Production Request Editor – DPR View, DPR List	<ul style="list-style-type: none">• The operator can review the characteristics of a particular data processing request• DPRs are created automatically from PRs	A DPR can be reviewed to inspect job parameters.

4.8.1.1 Quick Start Using Production Request Editor

To execute the Production Request Editor from the command line prompt use:

EcPIPRE_IFStart <mode> where:

<mode> is the ECS mode for the execution (e.g., OPS, TS1 or TS2)

Refer to the 910-TDA-022 “Custom Code Configuration Parameters” documentation series for a listing of EcPIPRE_IFStart.

4.8.1.2 Production Request Editor Main Screen

The Production Request Editor is a collection of display areas in a ‘tab stack’ selection arrangement – clicking on a tab along the top causes the associated tab “page” (also referred to as the tab) to be displayed. There are “pop-ups” associated with some of the tabs, which expand the displayed area and provide GUI interaction for sub-functions. The first tab in the ‘Planning’ window, shown in Figure 4.8.1-1, is the ‘cover page’ or default of the tab stack, which lists and describes the other tabs. The primary activities associated with the Production Request Editor activity are:

- Production Request Edit Tab (PR Edit)
- Production Request List Tab (PR List)

- Data Processing Request View Tab (DPR List)
- Data Processing Request List Tab



Figure 4.8.1-1. Production Request Editor GUI Showing the Planning Tab

In addition, on the menu bar, the pulldown menus provide the following capabilities.

- **File Pulldown:**
 - **Exit** – To exit the application

The **PR List** tab, shown in Figure 4.8.1-2, and **PR Edit** tab, shown in Figure 4.8.1-3, has a lot of commonality. The data displayed on the **PR List** tab is a subset of the data included on the **PR Edit** tab. These data fields are described in Table 4.8.1-2.

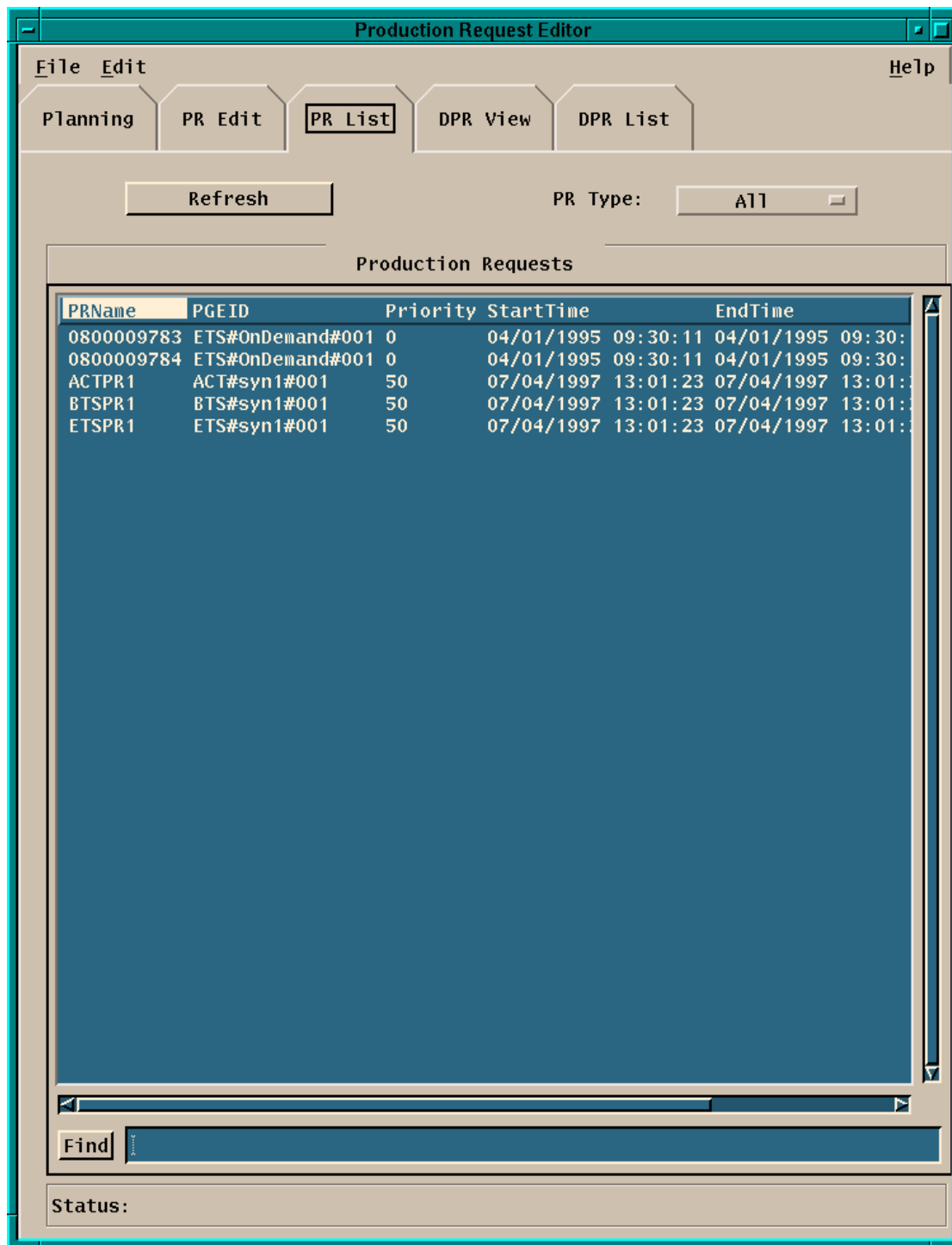


Figure 4.8.1-2. PR List Tab

The **PR List** tab allows the operator to review those PRs already entered into the system. The PRs are presented in the order in which they appear in the PDPS database as a one line summary display for each PR. Entering a search string in the field next to the 'Find' button and then clicking on the button can locate a particular PR. The first occurrence of the search string is highlighted. By clicking on (highlighting) a PR and then selecting the **File: Open** pulldown option, the **PR Edit** tab is initialized with information for that selected PR.

The menu bar for the **PR List** tab and its pulldown menus provide the following capabilities.

- **'File' Pulldown:**
 - **Open** – Allows the operator to open a highlighted, existing Production Request for review or editing in the **PR Edit** tab
 - **Exit** – To exit the application
- **'Edit' Pulldown:**
 - **Delete** – To delete a production request

The data on the **PR List** tab are identified by the column headings at the top of the display. These data descriptions are given in Table 4.8.1-2.

Production Request Editor

File Edit Help

Planning PR Edit PR List DPR View DPR List

PR Name: Origination Date:
 (UTC)

PR Type: Originator:

User Type: Priority (1 to 10):

Satellite Name:

Instrument Name:

PGE Name:

PGE Version:

Profile Id:

◇ Collection Time ◇ Insertion Time

Duration ◇ UTC Time ◇ Orbit

Collection Time

Begin / / - : :

End / / - : :

Tile Id

From

To

PGE Chain Head Computer

Intermittent DPR

Skip Keep ☐ SkipFirst

Comment:

Figure 4.8.1-3. PR Edit Tab

On the menu bar for the **PR Edit** tab, the pulldown menus provide the following capabilities.

- **'File' Pulldown:**
 - **New** – When selected, the fields are cleared to allow entry of a new Production Request
 - **Open** – Allows the operator to select an existing Production Request for review or editing. This function uses the File Selection Pop-up (Figure 4.8.1-4) invoked by **Save As**
 - **Save As...** - Allows the operator to save the displayed Production Request and give it a new PR name. This function uses the File Selection Pop-up (Figure 4.8.1-4) invoked by **Open**
 - **Exit** – To exit the application
- **'Edit' Pulldown:**
 - **Delete** – To delete a production request

Most PRs are slight modifications of existing PRs, for example, to change the time duration of a PR. The process for entering a new PR is usually to select an available PR via the **File: Open** feature. The user then would modify the parameters as necessary and save the new PR through the '**Save As...**' option on the '**File**' menu bar of **PR Edit**. This action brings up a separate pop-up to name the new PR. Also, a completely new PR can be entered directly via the **PR Edit** tab.

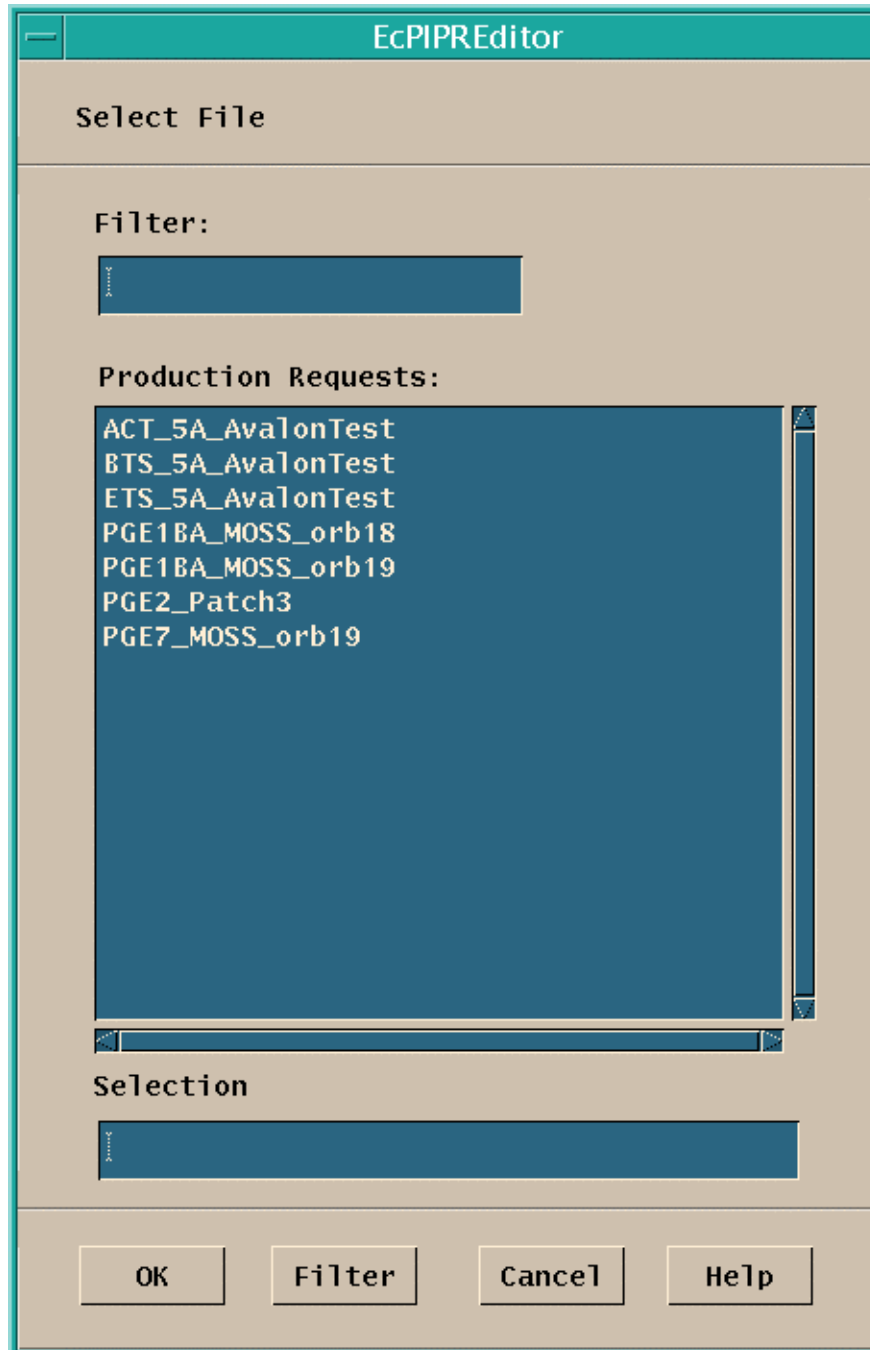


Figure 4.8.1-4. File Selection Pop-up

The **PR Edit** tab fields are organized into six regions: Production Request Identification, Request Definition, Duration, PGE Chain Head / Computer, Intermittent DPR, and Comment. The individual fields of the **PR Edit** tab are described in Table 4.8.1-2.

Table 4.8.1-2. PR Edit Field Description (1 of 2)

Field Name	Data Type	Size	Entry	Description
Production Request Identification	--	--	--	Information used to identify the PR and the originator.
PR Name	ASCII characters	<27	User input, required	A name for the PR.
Refresh	GUI selection	N/A	Click	Rereads the PDPS database and displays the most current PR information.
PR Type	GUI selection	N/A	Click	Routine, On Demand or Reprocessing
User Type	GUI selection	N/A	Click	Operator, DAAC Manager, Scientist or Researcher
Origination Date (UTC)	Date	10	System generated	Date of PR entry.
Originator	ASCII characters	<25	System generated	User ID of the user entering the PR.
Priority	Integer	<3	User input, required	Priority to be associated with the PR; 1≤value≤99.
Production Request Definition	--	--	--	Information defining the PR.
Satellite Name	ASCII characters	<25	System generated	Satellite name, if applicable, with which the PR/PGE is associated can be displayed when the PGE is selected.
Instrument Name	ASCII characters	<20	System generated	Instrument name, if applicable, with which the PR/PGE is associated can be displayed when the PGE is selected.
PGE Name	ASCII characters	<12	System generated	Name of PGE to be used in the PR can be displayed when the PGE is selected.
PGE Version	ASCII characters	10	System generated	The version number of the PGE to be associated with the PR can be displayed when the PGE is selected.
Profile ID	Integer	<3	System generated	The Profile Id of the PGE to be associated with the PR displayed when the PGE is selected.
Collection Time	Time	<22	System generated	Data start/stop time (in format: MMDDYYYY HH:MM:SS:MS)
Insertion Time	Time	<22	System generated	Time ASTER tape was inserted by the DAAC.
Duration	--	--	--	Time range over which the PR is applicable.
UTC Time	Button	N/A	User input required	UTC radio button, for use when instrument is time based. UTC start/stop date/times are then required.

Table 4.8.1-2. PR Edit Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
Orbit	Button	N/A	User input required	Orbit radio button, for use when the instrument is orbit based, such as MISR. The user is then required to enter the orbit number instead of start/stop date/time. After the orbit number is entered, the user can hit the UTC radio button, and the start/stop date/time for the orbit selected appears in the Collection Time Begin/End display.
Start Date	Date	8	User input, required	Start date of instrument data to be processed.
Start Time	Time	6	User input, required	Start time of instrument data to be processed.
End Date	Date	8	User input, required	End date of instrument data to be processed.
End Time	Time	6	User input, required	End time of instrument data to be processed.
From (Orbit)	Integer	<8	User input	User can select orbit from number as an alternative to UTC Time.
To (Orbit)	Integer	<8	User input	User can select orbit to number as an alternative to UTC Time.
Tile Id	Integer	<8	User input	User enters the number of the tile requested.
PGE Chain Head	Button	N/A	User input required	Radio button indicating whether the PGE associated with displayed PR is the first in a chained PGE scenario.
Computer	ASCII characters	<60	User input required	User clicks on the down arrow to display a list of computers on which DPRs can run. Selecting a computer populates the field.
Intermittent DPR	--	--	--	Information about the number of intermittent DPRs being skipped or kept.
Skip	Integer	<6	User input	Number of DPRs to skip.
Keep	Integer	<6	User input	Number of DPRs to keep.
SkipFirst	Flag	GUI	User selected	Determines whether the first DPR is skipped or kept.
Comment	ASCII characters	<255	User input, optional	User comment associated with the PR.
Status	ASCII characters	<20	System generated	Current status of the PR.

There are 4 function selection buttons in the Request Definition section of the screen:

1. **PGE Selection button**

As a part of the **PR Edit** process, a PGE needs to be associated with the PR. The PGE Selection pop-up contains a list of the PGEs available for selection and is accessed via the '**PGE...**' button on the **PR Edit** tab. The PGE Selection pop-up is shown in Figure 4.8.1-5. The information describing each PGE is entered through GUIs used in the SSI&T process, described in Section 4.5.1. To associate a PGE to a PR, the desired PGE is highlighted from the list of PGEs, and then selected by clicking the **OK** button on the PGE Selection pop-up. Entering a search string in the field next to the 'Find' button and then clicking on the button can locate a particular PGE. The resulting PGE list matches the search string in any of the displayed fields: PGE Name, PGE Version, etc. Clicking on the **Cancel** button at the bottom of the PGE Selection pop-up returns to the previous window.

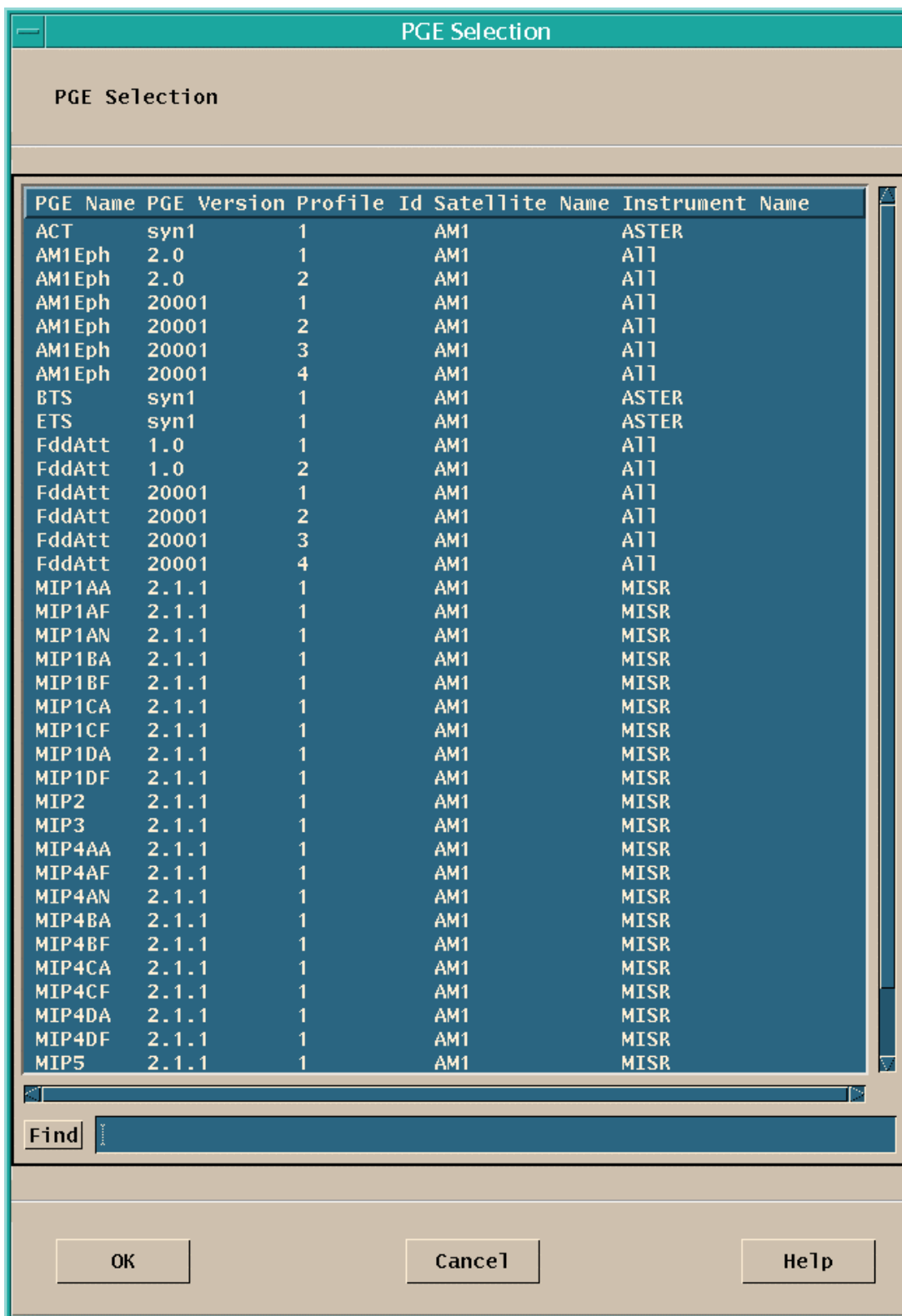


Figure 4.8.1-5. PGE Selection Pop-up

This screen has three function buttons:

- OK** Complete the action displayed (the selection)
- Cancel** Ignore the action displayed (the selection)
- Help** Display a Help pop-up with information about the function of this window.

The data displayed on this screen is described in Table 4.8.1-2.

2. **PGE Parameters button**

The parameters associated with a PGE when it is run are normally specified for the PGE when the PR is defined. If unspecified, the parameters default to values set during the SSI&T process, as described in Section 4.5.1. The production planner can edit or review these parameters by clicking the '**PGE Parameters...**' button on the **PR Edit** tab (Figure 4.8.1-3) once a PGE has been selected. The PGE Parameter Mappings pop-up used to edit/view the parameters are shown in Figure 4.8.1-6. The name of the PGE is shown in the text region at the top of the window. The window lists each parameter on a line with its default value. Entering a search string in the field next to the 'Find' button and then clicking on the button can locate a particular PGE Parameter. The resulting list of PGE Parameters matches the search string in any of the displayed fields: Parameter Name, Logical ID, etc. To override a value, select the desired parameter line, enter the override value in the 'Override Value' text region at the bottom, click **Apply** and then click **OK**.

PGE Parameter Mappings

PGE ID:

Parameter Name	Logical Id	Default Value
num. parameters for output product 2000	2400	16
NUM_INPUT_LO	20002	0
NUM_INPUT_HDF	20003	1
NUM_INPUT_NON_HDF	20004	0
NUM_ALTERNATE_INPUTS	20005	0
NUM_OUTPUT_HDF	20006	1
NUM_OUTPUT_NON_HDF	20007	0
SPACECRAFT_NAME	20008	EOSAM1
first met. param. for output product 2000	200000	DayNightFl
second met. param. for output product 2000	200001	AutomaticQ
third met. param. for output product 2000	200002	AutomaticQ
forth met. param. for output product 2000	200003	QAPercentM
fifth met. param. for output product 2000	200004	QAPercentC
sixth met. param. for output product 2000	200005	LocalGranu
seventh met. param. for output product 2000	200006	ParameterN
eighth met. param. for output product 2000	200007	GRingPoint
nineth met. param. for output product 2000	200008	GRingPoint
tenth met. param. for output product 2000	200009	GRingPoint
11th met. param. for output product 2000	200010	ExclusionG
12th met. param. for output product 2000	200011	TimeofDay:
13th met. param. for output product 2000	200012	CalendarDa
14th met. param. for output product 2000	200013	PGEVersion
15th met. param. for output product 2000	200014	QAPercentO
16th met. param. for output product 2000	200015	QAPercentI

Find

Override Value

Figure 4.8.1-6. PGE Parameter Mappings Pop-up

This screen has four function buttons:

- **OK** Complete the action displayed (the selection)
- **Apply** Update the database with the value entered
- **Cancel** Ignore the action displayed (the selection)
- **Help** Display a Help pop-up with information about the function of this window.

The data displayed on this screen is described in Table 4.8.1-2.

3. Metadata checks button

The Metadata checks button on the PR Edit tab invokes the MetaDataChecks pop-up window shown in Figure 4.8.1-7. This function allows the operator to check a metadata value against a specified input data granule metadata field value to determine if the data granule can be used or a PGE performed to update the values. The production planner can edit or review these values in the MetaDataChecks pop-up window. This window is invoked by clicking the '**Metadata Checks...**' button on the **PR Edit** tab (Figure 4.8.1-3) once a PGE has been selected. The name of the PGE is shown in the text region at the top of the window. The upper section of the window lists each input data type for the PGE and the lower section displays metadata check values. Entering a search string in the field next to the 'Find' button in the upper section of the window and then clicking on the button can locate a particular input data type. Selecting a particular input data type displays any metadata field values associated with the selected input data type in the lower section of the window. A particular metadata field can be located in the lower section of the window by entering a search string in the field next to the '**Find**' button in the lower section of the window and then clicking on the button. To modify a value, select the desired metadata checks line in the lower section of the window. The metadata field name is displayed in the 'MetaDataField' text region and the current metadata value is displayed in the 'Value' text region at the bottom. Enter the modified value in the 'Value' text region, click **Apply** and then click **OK**.

MetadataChecks

PGE ID: ACT#syn1#01

InputDataType

AST_L1BT#001

GDAS_OZF#001

AST_ANC#001

Find

MetadataField Operator Value Type

Find

MetadataField:

Value:

OK Apply Cancel Help

Figure 4.8.1-7. MetadataChecks Pop-up

This screen has four function buttons:

- **OK** Complete the action displayed (the selection)
- **Apply** Update the database with the value entered
- **Cancel** Ignore the action displayed (the selection)
- **Help** Display a Help pop-up with information about the function of this window

Table 4.8.1-3 describes the fields displayed on the PR Edit-MetaDataChecks pop-up window.

Table 4.8.1-3. PR Edit-MetaDataChecks Field Description

Field Name	Data Type	Size	Entry	Description
PGE ID	ASCII characters	<17	System generated	ID of the associated PGE.
Input Data Type	ASCII characters	<20	System generated	Identifiers for the data types used as input for the selected PGE.
MetaData Field	ASCII characters	<40	System generated	Name of the metadata field.
Operator	ASCII characters	<3	System generated	The logical operator (<, >, =, <=, =>) used with the metadata field.
Value	ASCII characters	<80	System generated	The value stored in the selected metadata field.
Type	ASCII characters	<5	System generated	Metadata field characteristic (Float, Int, String).

4. Alternate Input Values button

The Alternate Input Values button on the PR Edit tab causes the AlternateInputValues pop-up shown in Figure 4.8.1-8 to appear. This function allows the operator to select a replacement for a data input to a PGE with multiple inputs. This can be necessary if inputs to the PGE are not available and alternative inputs can be used.

AlternatInputValues

PGE ID: MIP1BA#2.1.101

AlternateListName

Find

Order DataType LogicalID Timer

Find

Order

▲

▼

DataType:

Timer: 00 : 00 : 00

▲

▼

Ok Apply Cancel Help

Figure 4.8.1-8. AlternatInputValues Pop-up

This screen has four function buttons:

- **OK** Complete the action displayed (the selection)
- **Apply** Update the database with the value entered
- **Cancel** Ignore the action displayed (the selection)
- **Help** Display a Help pop-up with information about the function of this window

Table 4.8.1-4 describes the information displayed on the AlternateInputValues pop-up.

Table 4.8.1-4. PR Edit-AlternateInputValues Field Description

Field Name	Data Type	Size	Entry	Description
PGE ID	ASCII characters	<17	System generated	ID of the associated PGE.
Alternate List Name	ASCII characters	<20	System generated	Identity of the primary data type for this input.
Order	Integer	<99	System generated/ User changeable	Current order of this data type.
Data Type	ASCII characters	<20	System generated	Identity of the data type.
Logical ID	Integer	<8	System generated	The SDP Toolkit logical identifier used to reference the data type.
Timer	Long Integer	<12	System generated/ User changeable	The time period the Subscription Manager waits for an alternate input to arrive.

4.8.1.2.1 DPR View and DPR List Tabs

The **DPR List** tab, shown in Figure 4.8.1-9, and the **DPR View** tab, shown in Figure 4.8.1-10 have a lot of commonality. The data displayed on the **DPR List** tab is a subset of that included on **DPR View** tab. Also, the dropdown menus of both tabs have the same options.

Production Request Editor

File Edit Help

Planning PR Edit PR List DPR View DPR List

PR Name: CG_Combo1.pr PR Type: ALL

Filter Data Processing Requests

DPRId	PGEId	PRName	TitleId	DataStartTim
CG_Combo#s010000000PS	CG_Combo#syn1#001	CG_Combo1.pr	0	01/01/1999 0

Find

Status:

Figure 4.8.1-9. DPR List Tab

DPRs are generated automatically from the PRs described above during Planning. The Production Request Editor GUI provides capabilities to review these DPRs. By selecting the '**DPR List**' tab, a list of DPRs is displayed (in the order in which they have been entered into the PDPS database) for review in the same manner in which PRs are selected and edited. In addition, on the menu bar, the pull-down menus provide the following capabilities.

- '**File**' Pulldown:
 - **Open** - Allows the operator to select an existing DPR for review in the DPR View tab. In the **DPR View** tab (but not in the **DPR List** tab), this function uses the File Selection Popup (Figure 4.8.1-4)
 - **Exit** - To exit the application
- '**Edit**' Pulldown:
 - **Delete** - To delete a DPR

Each line of the **DPR List** display represents a DPR, i.e., a job run when all data and resource needs are satisfied. Entering in a search string in the field next to the 'Find' button and then clicking on the button can search for a particular DPR. The resulting DPR list can match the search string in any of the displayed fields: DPR ID, PGE ID, etc. In addition, DPRs can be filtered for associated PRs by selecting a PR using the Production Request selection tool at the top of the window and clicking on the '**Filter**' button. By selecting (clicking on) one of the DPR summary lines, selecting 'Open' from the 'File' pull-down, and selecting the '**DPR View**' tab, that DPR is displayed in detail.

Production Request Editor

File Edit Help

Planning PR Edit PR List DPR View DPR List

All Times In UTC

Data Processing Request Identification

DPR Name: ACT#syn1#004130123TS1 PR Name: ACT_5A_AvalonTest

Origination Date: 08/16/1999 13:58:31

Originator:

PGE ID: ACT#syn1#01

Data Start Time: 07/04/1997 13:01:23

Data Stop Time: 07/04/1997 13:01:24

PGE Parameters...

PGE File Mappings...

Request Data and Status

Predicted Start

Time: 08/16/1999 13:58:47 Priority: 250

Actual Start

Time: 08/16/1999 13:58:47 Status: SUCC_DEL

Figure 4.8.1-10. DPR View Tab

This screen has two function buttons:

- **PGE Parameters** See Figure 4.8.1-5
- **PGE File Mappings** See Figure 4.8.1-11

The **DPR View** tab fields are organized into three regions: Data Processing Request Identification, PGE Information, and Request Data and Status. The individual fields of the **DPR View** tab are described in Table 4.8.1-5.

Table 4.8.1-5. DPR View Field Description

Field Name	Data Type	Size	Entry	Description
Data Processing Request Identification	--	--	--	Information used to identify the DPR and the originator.
DPR Name	ASCII characters	<24	System generated	DPR name generated from the associated PGE.
PR Name	ASCII characters	<27	System generated	A name for the associated PR.
Origination Date	Date	8	System generated	Date of PR entry.
Originator	ASCII characters	<25	System generated	User ID of the user entering the PR.
PGE Information	--	--	--	Information describing the PGE.
PGE ID	ASCII characters	<17	System generated	ID of the associated PGE.
Data Start Time	Date & time	17	System generated	Start date and time of the data to be processed by the job.
Data Stop Time	Date & time	17	System generated	Stop date and time of the data to be processed by the job.
Request Data and Status	--	--	--	Information describing the running status of the job.
Predicted Start Time	Date & time	17	System generated	Date and time at which the associated job is expected to be run, as predicted by the planning subsystem.
Actual Start Time	Date & time	17	System generated	Date and time at which the associated job ran.
Priority	Integer	3	System generated	Priority of the job; $100 \leq \text{Priority} \leq 1$.
Status	ASCII characters	<20	System generated	Status of the job.

DPRs are generated automatically from PRs during the Planning process, using PGE information defined during SSI&T. The PGE information can be viewed but not edited from this screen. This is because the information is quite complex and its alteration can have considerable side effects on the PGE execution.

PGE parameters can be viewed for a particular DPR run. Selecting the 'PGE Parameters' button on the DPR View can access these parameters. This screen is similar to Figure 4.8.1-6 shown earlier.

The input and output files for a particular DPR can be viewed by selecting the '**PGE File Mappings...**' button. The associated GUI is shown in Figure 4.8.1-11. The PGE File Mappings GUI displays one line of information for each file used by or being produced by the PGE. A particular input or output file can be searched for by entering in a search string in the field next to the '**Find**' button and then clicking on the button. The resulting file list can match the search string in any of the displayed fields. Information displayed includes:

- **Logical ID** The ID or tag used within the PGE to access the file
- **Granule ID** The ID or tag used to identify the file uniquely
- **Start/Stop Time** The start or stop date and time for the data contained in this file

UR File Mappings

File Mappings

Input Data

LogicalId	GranuleId	StartTime(UTC)	StopTime(UTC)
1200	AST_ANC#001L1000	01/01/1901 00:00:01	01/01/1901 00:00:01
1100	AST_L1BT#00107041997130123000	07/04/1997 13:01:23	07/04/1997 13:01:23
1101	GDAS_OZF#00101000	01/01/1901 00:00:01	01/01/1901 00:00:01

Find

Output Data

LogicalId	GranuleId	StartTime(UTC)	StopTime(UTC)
2000	AST_09T#00107041997130123000	07/04/1997 13:01:23	07/04/1997 13:01:23

Find

OK

Help

Figure 4.8.1-11. File Mappings Pop-up

4.8.1-25

609-CD-610-003

This screen has two function buttons:

- **OK** Dismiss the screen
- **Help** Display a Help pop-up with information about the function of this window

The individual fields of the **File Mappings** GUI are described in Table 4.8.1-6.

Table 4.8.1-6. File Mappings Field Description

Field Name	Data Type	Size	Entry	Description
Logical ID	Integer	<8	System generated	The SDP Toolkit logical identifier used to reference the data type.
Granule ID	ASCII characters	<20	System generated	Identity of the data type.
Start Time	Time	17	System generated	Start date/time of instrument data.
Stop Time	Time	17	System generated	End date/time of instrument data.

4.8.1.3 Required Operating Environment

These GUIs can be hosted on the Planning Server and Queuing Server or Planning Workstation.

For information on the operating environment, tunable parameters and environment variables of Production Strategies User Interface refer to the 910-TDA-022 “Custom Code Configuration Parameters” documentation series. The following table (Table 4.8.1-7) identifies the supporting products this tool depends upon in order to function properly.

Table 4.8.1-7. Support Products for Production Request Editor

Product
Sun Solaris 8
MOTIF 1.2.3
PDPS Database

4.8.1.3.1 Interfaces and Data Types

The Planning Subsystem has no interfaces external to ECS. It interfaces with the Data Processing Subsystem through the Planning and Data Processing System (PDPS) database to exchange planning information. The PDPS database is populated with information from the SSI&T components after the integration of a new or updated PGE. An element of the Planning system, which does not require an operator interface, the Subscription Manager, also interfaces with the ECS Science Data Server Subsystem.

The Planning Subsystem is primarily intended for use by the operations staff of the EOSDIS DAACs. However, the capability has been requested and made available for science personnel from the SCFs to enter Production Requests into the Planning subsystem using the same

interface as described above. This is to be done with the consent of the DAAC operations managers and via the X-11 interface with procedures and equipment provided to ensure a secure interface for these updates.

4.8.1.4 Databases

The Planning Subsystem includes the PDPS database, which contains information needed to plan the processing at a DAAC. It is also used for resource planning, containing information on the configured resources and their allocation. Finally, the Data Processing Subsystem, the other major element of the PDPS, uses the database. The following subsections provide a summary description of the PDPS database tables, and tools used with the database.

The SSI&T capability, which is a design component within the Data Processing Subsystem, includes capabilities to support the integration and test of the science software, PGEs, within the production-processing environment. As a part of this activity, the SSI&T GUI, described in Section 4.5.1 of this document, provides for the entry into the databases used by SSI&T of PGE-related information needed to plan for and run science software. At the conclusion of the SSI&T process, this database information is transferred to the operational databases from the databases established for SSI&T.

The Production Request Editor allows changes to scheduling information for PRs and DPRs. The complete database schema is listed in 311-CD-623, *Planning and Data Processing Subsystem Database Design and Schema Specifications*.

4.8.1.5 Special Constraints

There are no special constraints associated with the Production Request Editor.

4.8.1.6 Outputs

Outputs of the Production Request Editor are provided in one of two ways:

1. Production Request Editor GUI responses as described above, including the File Mapping GUI.
2. Updates to the PDPS database (described in Section 4.8.1.3).

4.8.1.7 Event and Error Messages

The Production Planning GUIs provide informational messages or warnings for minor errors, which the operator can immediately correct directly via the operator interface. Significant production planning events or errors are logged to the ECS Planning Server ALOG file. The Error messages are listed in Appendix A.

4.8.1.8 Reports

None.

This page intentionally left blank.

4.8.2 Production Planning Workbench

The second major element of production planning is the Production Planning Workbench (PWB). Table 4.8.2-1 summarizes the operational functionality of this tool. Via the PWB GUI, the operator selects a Production Request (PR) to be included in the plan. The planning tool provides a forecast of the start and completion times of the jobs based upon historical experience in running these PGEs. Using the planning tool, the operator can “activate” the plan, i.e., transfer the information included in the plan to the Data Processing subsystem and loads it into the AutoSys tool where production processing is managed.

Table 4.8.2-1. Common ECS Operator Functions Performed with the Production Planning Workbench

Operating Function	Description	When and Why to Use
Create a Plan	The operator can select available PRs to be included in the plan.	When a new or revised plan needs to be prepared.
Activate a Plan	The operator can activate a plan, which transfers the planned jobs into the Data Processing System.	When a new plan is prepared and accepted.
Save a Candidate Plan	The operator can create What-if scenarios.	When plans are in the process of being created.

4.8.2.1 Quick Start Using Production Planning Workbench

To execute Production Planning Workbench from the command line prompt, enter:

>EcPlAllStart <mode> <Application ID>

Where:

<mode> is the ECS mode under which the program is to run (e.g., OPS, TS1 or TS2)

<Application ID> is an integer from 1 to 5 uniquely identifying the execution

This action results in the display of the Production Planning Workbench main window and the Planning Master Timeline GUI discussed in the following sections.

4.8.2.2 Production Planning Workbench Main Screen

When the Production Planning Workbench is started, the GUI window shown in Figure 4.8.2-1 is one of the windows displayed. Table 4.8.2-1 contains a description of the fields in this GUI. The GUI is started using information from the currently activated plan. Other plans can be opened or new plans created and saved using the ‘New’, ‘Open’, ‘Save’, and ‘Save As’ options on the ‘File’ pull down on the menu bar, much like creating, opening, and saving a text document.

Comments to the plan can be made in the indicated region. Selected PRs can be moved from one list to the other using the arrow buttons. A PR is scheduled by selecting from the pool of

available 'Unscheduled' PRs and, using the arrow buttons, the selected PRs are moved to the 'Scheduled' list. A note of clarification about Ground Events during scheduling: All Ground Events are automatically scheduled with any plan. Hence the GUI Ground Events are always being put into the 'Scheduled' list. Whenever a plan is activated, the Ground Events are also being activated. (If there is an unscheduled Ground Event in the 'Unscheduled' list, this means that this Ground Event has lost allocations.) The new plan can then be saved with a new name through the 'Save As' option on the 'File' pull-down menu.

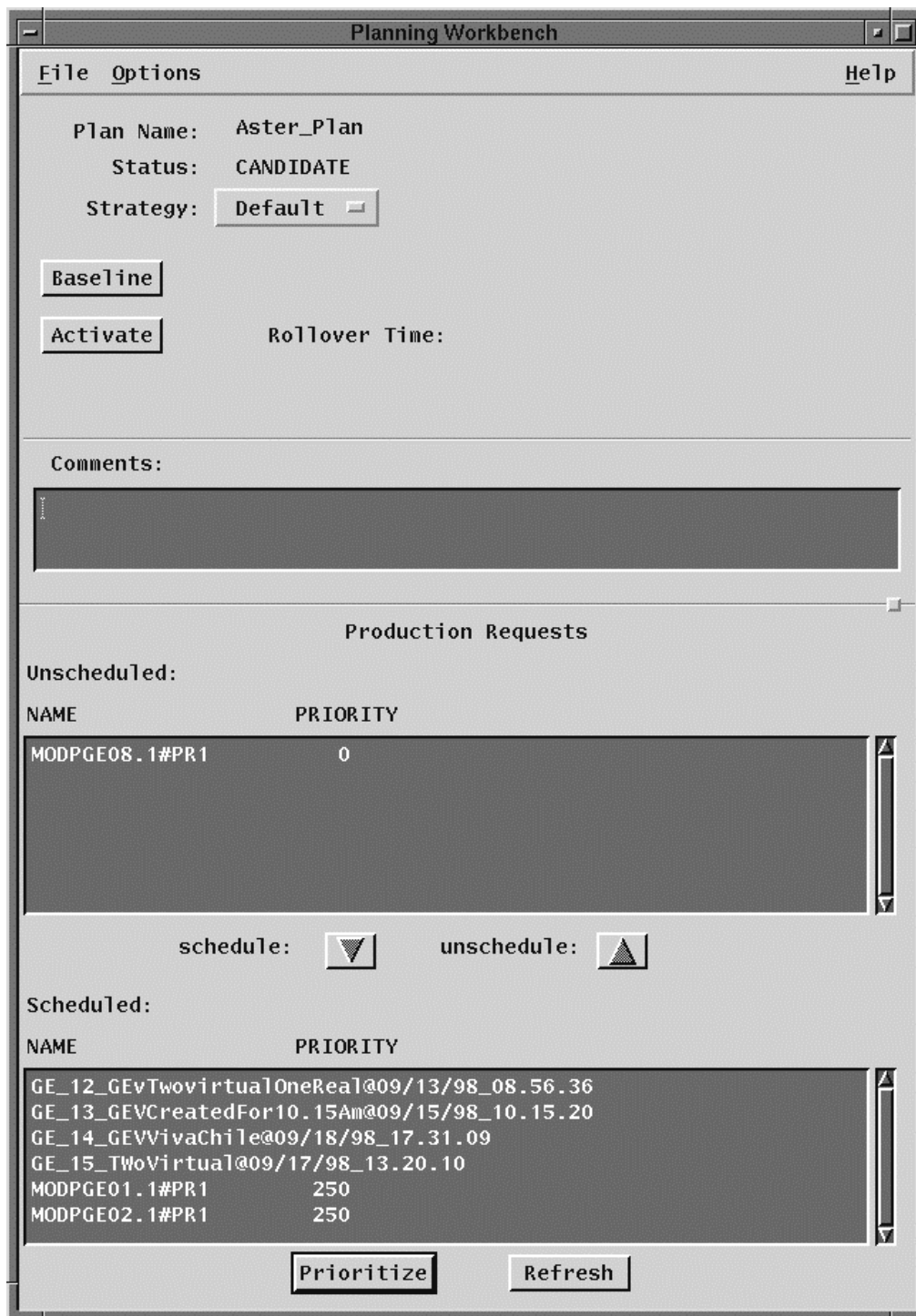


Figure 4.8.2-1. Production Planning Workbench GUI

The following describes the pulldown menu options supported by the PWB GUI:

File

New clears all the fields, and creates a new plan. The new plan name cannot be longer than 20 characters

Open allows the user to select an existing Production Plan for review or editing. This function invokes a File Selection Pop-up for specifying the file to be opened

Save saves the current plan

Save As saves the displayed PR under a new PR name. This function uses the File Selection Pop-up for specifying the new name of the PR

Delete allows the user to delete a plan via a file selection pop-up. The active plan cannot be deleted but other candidate plans can be removed

Exit exits the application

Options (no functionality has been associated with this menu, as yet)

Help – Provides assistance in using the PWB GUI

The following push buttons are supported on the PWB GUI:

Baseline records the plan and the time the record was baselined. This baseline plan can be used as a point of comparison with which to compare future plans and results

Activate activates a plan and the Data Processing Requests (DPRs) associated with the planned PRs are then transferred to the Data Processing subsystem and loaded into the AutoSys production queuing system. Once the necessary data dependencies are satisfied, the jobs to be run are 'released' when processing resources are available. When the Activate button is pressed on the planning workbench, the current active plan gets "replanned over" by the selected plan. A pop-up listing any unprocessed DPRs that are in the "old" active plan and not selected in the "new" plan is displayed and the user is asked to confirm that these DPRs are to be cancelled

Schedule schedules the selected PRs in the Unscheduled List

Unschedule un-schedules the selected PRs in the Schedule List

Prioritize allows for the modification of priorities associated with PRs. To change the priority for a PR, select (highlight) the PR and press the Prioritize button. A Priority pop-up is displayed. Enter a new priority in the text region for the selected PR and press OK

Refresh not yet available

Also a pulldown list is available on the PWB GUI:

Strategy: selects different strategies for scheduling, which determine the priorities assigned to the individual PRs in a plan

For all of these actions, the operator is prompted for confirmation before proceeding. Table 4.8.2-2 summarizes the information fields on the PWB GUI.

Table 4.8.2-2. Production Planning Workbench Field Description

Field Name	Data Type	Size	Entry	Description
Plan Name	ASCII characters	<20	System generated	Name assigned to the plan; assigned initially when the 'New' plan is saved.
Status	ASCII characters	<20	System generated	Status of the displayed plan: 'Active', 'Candidate.'
Rollover Time	ASCII characters	19	System generated	The time at which the currently selected plan was activated.
Comment	ASCII characters	<256	User input, optional	User comments.
Production Requests: Unscheduled	ASCII characters	<256	System generated	List of available PRs, which are currently not scheduled.
Production Requests: Scheduled	ASCII characters	<256	User input	List of available PRs, which are currently scheduled. Planner selects these from 'Unscheduled' list and moves them to/ from 'Scheduled' with arrow buttons.

4.8.2.2.1 Planning Master Timeline GUI

Figure 4.8.2-2 is the Planning Master Timeline GUI main screen, which is brought up when the Production Planning Workbench is started as explained in Section 4.8.2.1.

The **Planning Master Timeline GUI** represents a set of computers, arranged along the left side of the GUI, and some period of time as indicated across the top edge of the GUI. Several bars across the GUI for that computer represent the execution of Data Processing Requests (DPRs) on a computer over a period of time. A bar represents a time period during which a PGE (as described by a DPR) is running. Each bar has the name of the PGE. Scroll bars allow scrolling up and down through the full list of computers and left and right in time. A select list of time span viewing options (e.g., 24-hours, 48-hours) at the lower left of the screen is available for selecting the time span of interest. If one exits from the **Planning Master Timeline GUI**, it can be restarted as explained in Section 4.8.2.1.

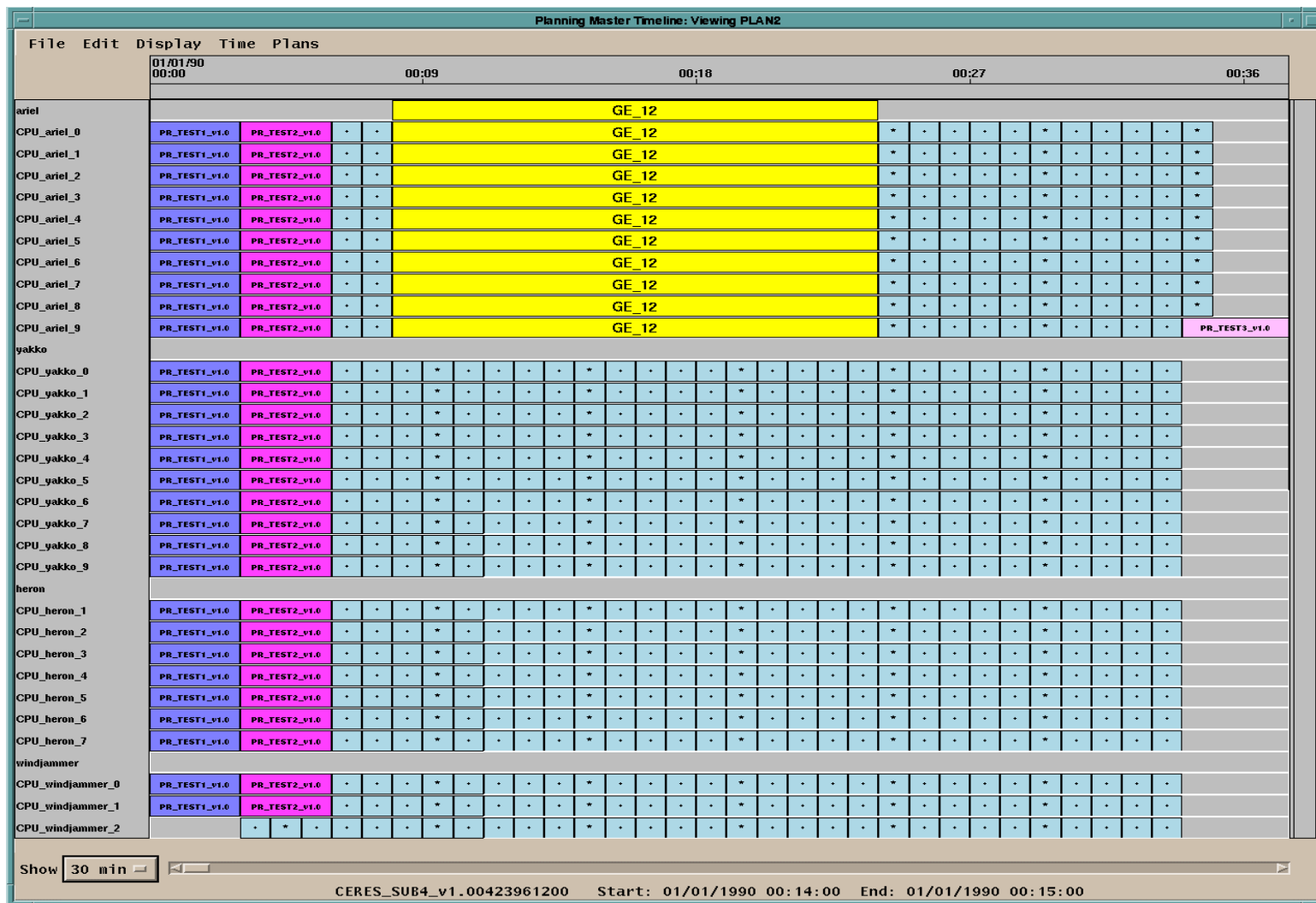


Figure 4.8.2-2. Planning Master Timeline GUI

The Planning Master Timeline Pulldown Menu Options are:

File

Open Plan: Opens a previously created plan through a file selection pop-up. It loads it in the main region of the timeline and adds it to the plans menu buttons

Load Configuration: loads a configuration for the timeline containing a list of resources and color options. It does this through a file selection

Save Configuration: saves a configuration file

Exit: quits application

Edit - Not yet supported

Display - To select resources and attributes of the display (e.g., colors)

Time - To select Start and Stop times of the plan windows

Plans - To elect plans to include

4.8.2.3 Required Operating Environment

These GUIs can be hosted on the Planning Server and Queuing Server or Planning Workstation.

For information on the operating environment, tunable parameters and environment variables of Production Strategies User Interface refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series.

Table 4.8.2-3 identifies the supporting products this tool depends upon in order to function properly.

Table 4.8.2-3. Support Products for Production Planning Workbench

Product
Sun Solaris 8
MOTIF 1.2.3
PDPS Database

4.8.2.3.1 Interfaces and Data Types

The Production Planning Workbench has no interfaces external to ECS. It interfaces with the Data Processing Subsystem through the Planning and Data Processing System (PDPS) database.

4.8.2.4 Databases

The Production Planning Workbench updates the information in the PDPS database for subsequent use by the Data Processing software. It updates entries in DB tables such as PIDataProcessingRequest, PIPlans, and PIGroundEvent.

The complete database schema is listed in 311-CD-623, *Planning and Data Processing Subsystem Database Design and Database Schema for the ECS Project*.

4.8.2.5 Special Constraints

There are no special constraints that are associated with the production planning tools.

4.8.2.6 Outputs

Outputs of the Production Planning Workbench are provided in one of three ways:

Production Planning Workbench GUI responses as described above, including the Production Plan Timeline display, Figure 4.8.2-2.

For Updates to the PDPS database, see section 4.8.2.4.

4.8.2.7 Event and Error Messages

The Production Planning Workbench provides informational messages or warnings for minor errors, which the operator can immediately correct directly on the operator interface. Significant production planning events or errors are logged to the ECS Production Server ALOG file. Both event and error messages are listed in Appendix A.

4.8.2.8 Reports

Report generation capability is not available.

4.8.3 Production Strategies User Interface

The Production Strategies User Interface is used to tailor the priority of production requests (PRs). Table 4.8.3-1 summarizes the operation functionality of this tool. The priority of production requests impacts the development of processing plans. Production Strategy is a method of developing a composite priority from several factors for a production request. These factors can be assigned different proportions of the final priority. The factors themselves are composed of attributes, which can be given separate priorities. The factor attributes are then averaged to produce the priority of the factors.

The Production Strategies User Interface provides an option to display the default values for the factors and components.

Table 4.8.3-1. Common ECS Operator Functions Performed with Production Planning GUIs

Operating Function	GUI	Description	When and Why to Use
Manage Production Strategies	Production Strategies User Interface	The operator can view, create, modify, or delete Production Strategies.	When the priority of a PR needs to change to adjust processing scheduling.

4.8.3.1 Quick Start Using Production Strategies User Interface

To execute the Production Strategies User Interface from the command line prompt, enter:

>EcPIProdStratStart <mode>

where: <mode> is the ECS mode (e.g., OPS, TS1 or TS2).

Refer to the 910-TDA-022 “Custom Code Configuration Parameters” documentation series, for a listing of EcPIProdStratStart.

4.8.3.2 Production Strategies User Interface Main Screen

Figure 4.8.3-1 is the Production Strategies Main Screen.

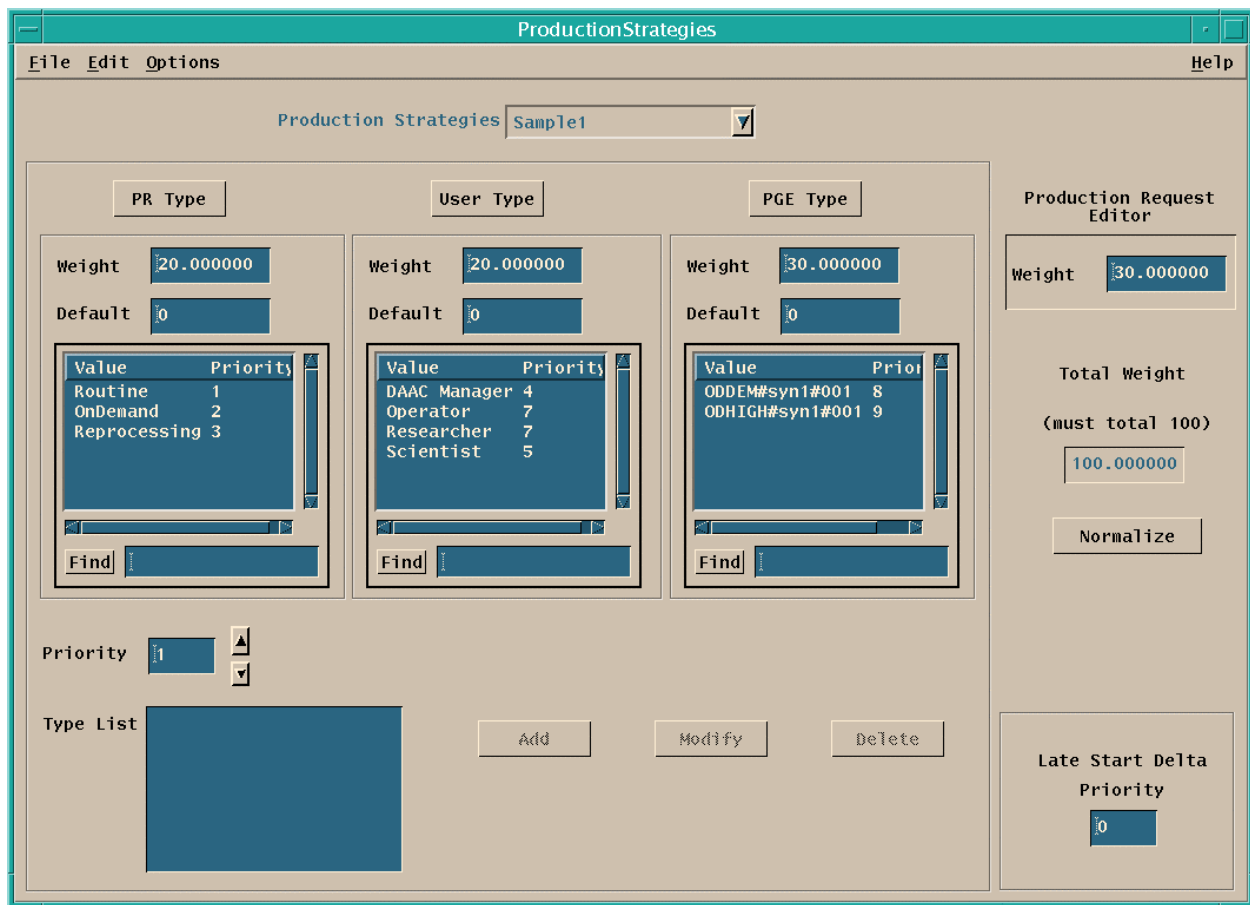


Figure 4.8.3-1. Production Strategies Main Screen

The menu bar for the Production Strategies User Interface GUI contains pulldown menus providing the following capabilities.

File Pulldown:

Open displays the Open Production Strategies pop-up window shown in Figure 4.8.3-2 with the production strategies currently in the PDPS database

New clears all the display areas on the screen for input

Save saves the displayed values to the database for the production strategy displayed

Save As saves the displayed production strategy to the database as a different strategy

Exit to exit the application

Edit Pulldown:

Delete - To delete a production strategy

Options Pulldown:

ActiveStrategy - Displays the **Active Production Strategy** screen shown in Figure 4.8.3-3)

Other options available on the Production Strategies screen:

Pr Type selects the PR Type panel as active

User Type selects the User Type panel as active

PGE Type selects the PGE Type panel as active

Normalize adjusts the weighting values to total 100

Add the Type List/Priority pairs displayed on the screen to the selected type

Modify the Type List/Priority pairs displayed on the screen in the selected type

Delete the Type List/Priority pairs displayed on the screen from the selected type

The parameters associated with the Production Strategies User Interface are used as attributes and weights to generate the priorities for use by the overall Production Plan. All the parameters for the Production Strategies User Interface tools are accessible through the operator GUIs. These parameters are listed in Table 4.8.3-2. The parameters correspond to the sub-schema elements in the PDPS database referenced in Section 4.8.3.4 below.

The Production Strategies User Interface creates a two-level scheme for prioritizing the Production Plans. One level divides the plan into components: PR Type, User Type, PGE Type, and the Production Request Editor. Each of these components (except Production Request Editor) is further broken down into elements related to the Type. In the picture of the screen these elements can be observed in the list boxes under the type labels. Each of the elements can be assigned a priority.

The element priority assignment is initiated by selecting one of the type buttons. A type button brings one of the type frames into focus and displays the type elements in the Type List in the lower left corner of the screen. Element priorities are assigned or changed by selecting an element in the Type List, choosing a priority in the scroll box above the Type List, and clicking the appropriate button for Add, Modify, or Delete. The result appears in the type frame list box with the value (element) and priority displayed. The Production Strategies GUI re-computes the overall type priority based on the current element priorities of that type.

The second level of the priority scheme involves giving “weight” to the types. This “weight” is similar in concept to percentage. Note: the sum of the four “weight” values must equal 100. Each of the types can be given a weight. The fourth weight is the one assigned by the user in the Production Request Editor. As the values are entered, the program totals the weights and displays an error dialog if the total is over 100.00. The program does not allow the entry of a weight that causes the total to exceed 100.00. If the total is less than 100.00 the operator can use the “Normalize” button to scale the weight values to base 100.00.

Table 4.8.3-2. Production Strategies Field Descriptions (1 of 2)

Field Name	Data Type	Size)	Entry	Description
Production Strategies	ASCII text-	20	Default = Default	Production Strategy Id.
PR Type	--	--	--	Strategy component name (Production Request).
Weight	Floating Pt number	<100.	Default = 50.00000	Weight for this component in final priority computation.
Default	Integer	<10	Default = 5	Priority for component.
Routine	Integer	<10	Default = 5	(Sub) priority for Routine Requests.
OnDemand	Integer	<10	Default = 7	(Sub) priority for On-Demand Requests.
Reprocessing	Integer	<10	Default = 3	(Sub) priority for Reprocessing Requests.
User Type	--	--	--	Strategy component name (User Type – all users).
Weight	Floating Pt number	<100.	Default = 00.00000	Weight for this component in final priority computation.
Default	Integer	<10	Default = 5	Priority for a component.
DAAC Manager	Integer	<10	Default = 0	(Sub) priority for DAAC Manager Users.
Operator	Integer	<10	Default = 0	(Sub) priority for Operator Users.
Researcher	Integer	<10	Default = 0	(Sub) priority for Researcher Users.
Scientist	Integer	<10	Default = 0	(Sub) priority for Scientist Users.
PGE Type	--	--	--	Strategy component name (Product Generation Executive).
Weight	Floating Pt number	<100.	Default = 00.00000	Weight for this component in final priority computation.
Default	Integer	<10	Default = 5	Priority for component.
BTS#113#01	Integer	<10	Default = 0	(Sub) priority for PGE BTS#113#01.
Production Request Editor	--	--	--	Strategy component name (User that made the PR).
Weight	Floating Pt number	<100.	Default = 50.00000	Weight for this component in final priority computation – the priority is part of the PR.
Total Weight	Floating Pt number	< 100.	No Default	This field is zero unless the user enters a weight in one of the 4 weight fields: PR Type Weight, User Type Weight, PGE Type Weight, or User Selected Weight. If that value then becomes > 100.0, hit the “Normalize” button to normalize.

Table 4.8.3-2. Production Strategies Field Descriptions (2 of 2)

Field Name	Data Type	Size)	Entry	Description
Priority	Integer	< 10	Default = 1	Raise or lower this value by clicking on either the up or the down arrow beside that window.
Type List	ASCII text	20	Default = blank	For an active type (for example, click on the PR Type button), the various valid types appear in this window. Inactive types and their priorities can be added using the “Add” button. Existing active types can be modified using the “Modify” button.
Late Start Delta Priority	Integer	<100	Default = 0	Priority for a component.

4.8.3.2.1 Open Production Strategy Pop-up

The **Open Production Strategies** GUI shown in Figure 4.8.3-2 displays Production Strategies stored in the database. This pop-up is used to select the Production Strategy for display on the Production Strategies Main Screen.

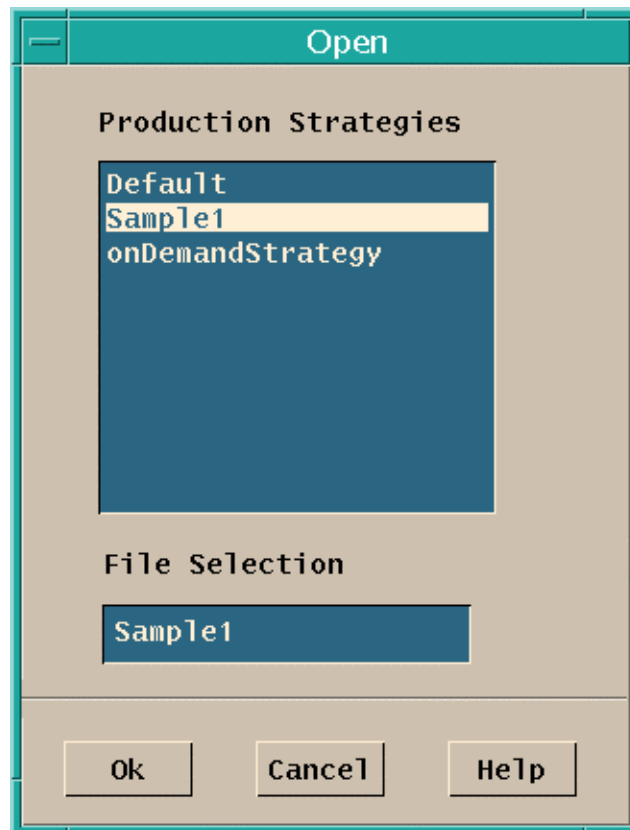


Figure 4.8.3-2. Open Production Strategies GUI Pop-up

The production strategies available in the PDPS database are displayed in the **Production Strategies** window. Selecting one of the displayed strategies causes the selected strategy to be displayed in the File Selection window. Click the “OK” button to accept the selection or the “Cancel” button to reject it to complete the open action.

4.8.3.2.2 Active Production Strategy GUI

The **Active Production Strategy** screen, shown in Figure 4.8.3-3, displays the default values from the PDPS database.

The screenshot shows the 'Active ProductionStrategy' window. It contains three main sections for 'PR Type', 'User Type', and 'PGE Type'. Each section has a 'Weight' input field (50.000000, 0.000000, 0.000000 respectively) and a 'Default' input field (5, 5, 5 respectively). Below these are list boxes with 'Value' and 'Priority' columns. The 'PR Type' list box is populated with 'Routine' (5), 'OnDemand' (7), and 'Reprocessing' (3). Each list box has a 'Find' button and an input field. At the bottom, there are 'Production Request Editor Weight' (50.000000) and 'Late Start Delta Priority' (0) fields, and a 'Cancel' button.

Figure 4.8.3-3. Active Production Strategy GUI Screen

The fields displayed on the **Active Production Strategy** GUI are the same as those on the Production Strategies User Interface, Table 4.8.3-2.

4.8.3.3 Required Operating Environment

These GUIs can be hosted on the Planning Server and Queuing Server or Planning Workstation.

For information on the operating environment, tunable parameters and environment variables of Production Strategies User Interface, refer to the 910-TDA-022 “Custom Code Configuration Parameters” documentation series. Table 4.8.3-3 identifies the supporting products this tool depends upon to function properly.

Table 4.8.3-3. Support Products for Production Strategies User Interface

Product
Sun Solaris 8
MOTIF 1.2.3
PDPS Database

4.8.3.3.1 Interfaces and Data Types

The Planning Subsystem has no interfaces external to ECS. It interfaces with the Data Processing Subsystem through the Planning and Data Processing System (PDPS) database to exchange planning information. The PDPS database is populated with information via the SSI&T components after the integration of a new or updated PGE. An element of the Planning system, which does not require an operator interface, the Subscription Manager interfaces with the ECS Science Data Server Subsystem.

The Planning Subsystem is primarily intended for use by the operations staff of the EOSDIS DAACs. However, the SCFs have the capability to enter Production Requests into the Planning subsystem using the same interface as described above.

4.8.3.4 Databases

The Planning Subsystem includes the PDPS database, which contains information needed to plan the processing at a DAAC. It is also used for resource planning, as it contains information on the configured resources and their allocation. The Data Processing Subsystem, the other major element of the PDPS, uses the database. The following subsections provide a summary description of the PDPS database table, and tools used with the database.

The SSI&T capability, which is a design component within the Data Processing Subsystem, includes capabilities to support the integration and test of the science software (PGEs) within the production, processing environment. As a part of this activity, the SSI&T GUIs, described in Section 4.5 of this document, provide for the entry into the databases used by SSI&T of PGE-related information needed to plan for and run science software. At the conclusion of the SSI&T process, this database information is transferred to the operational databases from the databases established for SSI&T.

The complete database schema is listed in the DID 311 document, 311-CD-623 for the release, *Planning and Data Processing Subsystem Database Design and Database Schema Specifications for the ECS Project*.

4.8.3.5 Special Constraints

There are no special constraints that are associated with the Production Strategies User Interface tools.

4.8.3.6 Outputs

Outputs of the Production Strategies User Interface are provided in the following ways:

1. Production Strategies User Interface responses as described above
2. Updates to the PDPS database (described in section 4.8.3.3)

4.8.3.7 Event and Error Messages

The Production Strategies User Interface tool provides informational messages or warnings for minor errors. Significant events or errors are logged to the ECS Production Strategies Server ALOG file. The Error messages are listed in Appendix A.

4.8.3.8 Reports

The Production Strategies User Interface does not produce any reports.

4.8.4 PIPRGenerator User Interface

The PIPRGenerator, the command line interface for the Production Request Editor, allows the user to create and activate a number of Routine Production Requests using information contained in an input file. The input file contains the PgeIds and GEOIds for the PGEs and primary input granules, respectively, for the Production Requests to be created.

Table 4.8.4-1 summarizes the operation functionality of this tool.

Table 4.8.4-1. Common ECS Operator Functions Performed with PIPRGenerator

Operating Function	GUI	Description	When and Why to Use
Generate and activate Production Requests.	No GUI Interface	The operator inputs a file containing PgeIds and GEOIds for the Production Requests to be generated.	When the user wants to generate multiple PRs for which the key input granuleIds are known.

4.8.4.1 Quick Start Using the PIPRGenerator

To execute the PIPRGenerator from the command line prompt, enter:

>EcPIPRGenerator <mode> <PRInfoFile>

<mode> is the ECS mode (e.g., OPS, TS1 or TS2).

<PRInfoFile> must be a Unix file, which contains pairs of PgeId and GEOId.

The format of PRInfoFile:

ACT#syn1#001 SC:AST_L1BT.001.19074

BTS#syn1#001 SC:AST_L1BT.001.19075

The path of the PRInfoFile is located in the EcPIPRGenerator.CFG file.

Refer to the 910-TDA-022 “Custom Code Configuration Parameters” documentation series, for a listing of the EcPIPRGenerator.

4.8.4.2 PIPRGenerator Main Screen

There is no main screen for the PIPRGenerator tool. This is a command line interface only.

4.8.4.3 Required Operating Environment

The required operating environment for the PIPRGenerator is the Sun Solaris 8.

4.8.4.3.1 Interfaces and Data Types

The Planning Subsystem has no interfaces external to ECS. It interfaces with the Data Processing Subsystem through the Planning and Data Processing System (PDPS) database to exchange planning information. The PDPS database is populated with information from the

SSI&T components after the integration of a new or updated PGE. An element of the Planning system, which does not require an operator interface, the Subscription Manager, also interfaces with the ECS Science Data Server Subsystem.

The Planning Subsystem is primarily intended for use by the operations staff of the EOSDIS DAACs. However, the capability has been requested and made available for science personnel from the Science Computing Facilities to enter Production Requests into the Planning subsystem using the same interface as described above. This is to be done with the consent of the DAAC operations.

4.8.4.4 Databases

The Planning Subsystem includes the PDPS database, which contains information needed to plan the processing at a DAAC. It is also used for resource planning, as it contains information on the configured resources and their allocation. The Data Processing Subsystem, the other major element of the PDPS, uses the database. The following subsections provide a summary description of the PDPS database table, and tools used with the database.

The SSI&T capability, which is a design component within the Data Processing Subsystem, includes capabilities to support the integration and test of the science software (PGEs) within the production, processing environment. As a part of this activity, the SSI&T GUIs, described in Section 4.5 of this document, provide for the entry into the PDPS database of the PGE-related information needed to plan and run science software.

The complete database schema is listed in the DID 311 document, 311-CD-623, for the release, *Planning and Data Processing Subsystem Database Design and Database Schema Specifications for the ECS Project*.

4.8.4.5 Special Constraints

There are no special constraints associated with the PIPRGenerator User Interface tools.

4.8.4.6 Outputs

Outputs of the PIPRGenerator are as stated below:

1. Generates the Series of Production Requests and activates them as stated above
2. Updates to the PDPS database (described in Section 4.8.3.4)

4.8.4.7 Event and Error Messages

The PIPRGenerator User Interface tool logs informational messages warnings and errors into the EcPIPRGenerator.ALOG and EcPIPRGeneratorDebug.log files. The Error messages are listed in Appendix A.

4.8.4.8 Reports

The PIPRGenerator User Interface does not produce any reports.